APPENDIX C

Wildlife and Wildlife Habitat Report,
Wetland VEC & Vegetation VEC

Wildlife and Wildlife Habitat Report

1.0 WILDLIFE AND WILDLIFE HABITAT

1.1 Introduction

This report is intended to provide the results of a desktop investigation on the potential for wildlife and wildlife habitat (including migratory birds) within the Project footprint. The information and assessment is conducted in support of an Environmental Impact Assessment (EIA) required for the Beaubassin Campground Extension Project (the Project) as required under the New Brunswick *Environmental Impact Assessment Regulations 87-83* under the New Brunswick *Clean Environment Act*.

The Project is a campground extension on Euclide Leger Road in Shediac, New Brunswick. The Subject Property is a linear portion of land approximately 700 m x 150 m. It is bordered by a Provincially Significant Wetland coastal saltmarsh to the west (see Figure 1).

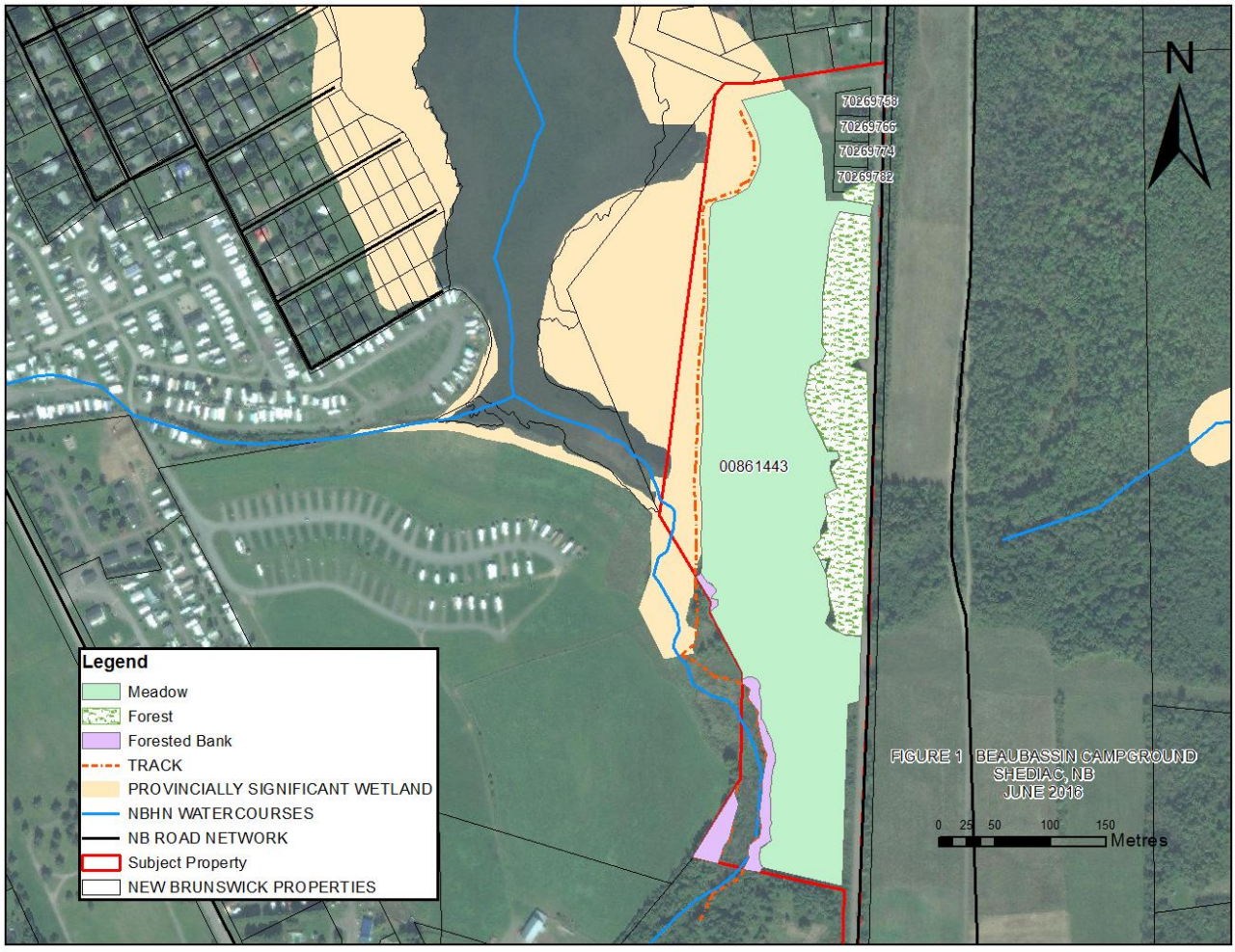

Figure 1 Beaubassin Campground Habitats for Wildlife

The context of wildlife considers birds and animals, and their habitat. Migratory birds are protected by the *Migratory Birds Convention Act* (*MBCA*) and its associated regulations. Some migratory bird species and their habitats are further protected by the *Species at Risk Act* (*SARA)*. Under Section 6 of *Migratory Birds Regulations* (*MBR*) no person shall disturb, destroy or take a nest or egg of a migratory bird, except under authority of a permit.

General wildlife in the area are likely typical of rural/urban environments and include such members as White-tailed Deer (*Odocoileus virginianus*), Raccoon (*Procyon lotor*), Skunk (*Mephitis mephitis*), Red Fox (*Vulpes vulpes*), Red Squirrel (*Sciurus vulgaris*), Eastern Chipmunk (*Tamias striatus*), Varying Hare (*Lepus americanus*), Coyote (*Canis volpus*)

1.2 Existing Bird Data

WSP conducted a review of available background information pertaining to wildlife and wildlife habitat, including birds and bird habitat near the Project. The following information sources were reviewed: the Important Bird Areas Database, the Maritimes Breeding Bird Atlas, and New Brunswick Department of Natural Resources (NBDNR) forestry data. Sections 1.2.1 to 1.2.3 provides a summary of the findings of the review of each information source. Section 2.4 (Species at Risk) and Section 2.5 (Species of Conservation Concern) summarize the species with special protective status that are known to occur within proximity of the Project. Section 2.6 provides an analysis of specialized habitats that may be near the Project.

1.2.1 Important Bird Areas (www.ibacanada.ca)

Important Bird Areas (IBAs) are discrete sites that support specific groups of birds: threatened birds, large groups of birds, and birds restricted by range or by habitat. IBAs range in size from very tiny patches of habitat to large tracts of land or water. They may encompass private or public land, and they may or may not overlap partially or entirely with legally protected sites.

Important Bird Areas are:

- Places of international significance for the conservation of birds and biodiversity
- Recognized worldwide as practical tools for conservation
- Distinct areas amenable to practical conservation action
- Identified using standardized criteria

There are no Important Bird Areas (IBA) near the Project. The closest IBA is IBA NB007 Buctouche Bar, approximately 25 Km north. The Project is not expected to interact with this IBA.

1.2.2 Maritimes Breeding Bird Atlas (www.birdstudiescanada.org)

The Avian Knowledge Network (AKN) is an international organization of government and non-government institutions focused on understanding the patterns and dynamics of bird populations across the Western Hemisphere. The goal is to educate the public on the dynamics of bird populations, provide interactive decision-making tools for land managers, make available a data resource for scientific research, and advance new exploratory analysis techniques to study bird populations.

The second Maritimes Breeding Bird Atlas (MBBA) is a five-year undertaking from 2006 to 2010 to update the distribution and abundance of all bird species breeding in the three Maritimes provinces. The first MBBA was conducted from 1986-1990. The MBBA database provides information including species presence, breeding evidence, and relative abundance in a given 10 km by 10 km area (known as an “atlas square”). The first MBBA (1986-1990) was also reviewed.

Information about the presence of breeding bird species within the Project was requested from the MBBA via the NatureCounts Website (www.birdscanada.org/birdmon). NatureCounts is one of the nodes of the AKN. This site is maintained by staff at Bird Studies Canada and they maintain the many thousands of records of bird species that were collected during the two Maritime Breeding Bird Atlases. This data is collected by systematic 10 km x 10 km grid square over the entire Maritimes Region. The Project site falls within Square 20LS82, Region #14 (Tintamarre).

The search results generated a list of species and records of highest breeding evidence for each species within the atlas squares occupied by the Project, as well as data on completed point counts and “rare and colonial” species. WSP requested the highest breeding evidence for all species recorded in both atlases for this square. Table 1 below is a summary of the total number of species recorded within this square during both Atlas periods. The highest breeding evidence is given for each species in each Atlas.

Square 20LS82 is in the northwest corner of the Tintamarre Region (see Figure 2) and includes a majority of open water. It is expected that a lot of the species recorded for this square will be water birds such as ducks, geese, gulls, and seabirds.

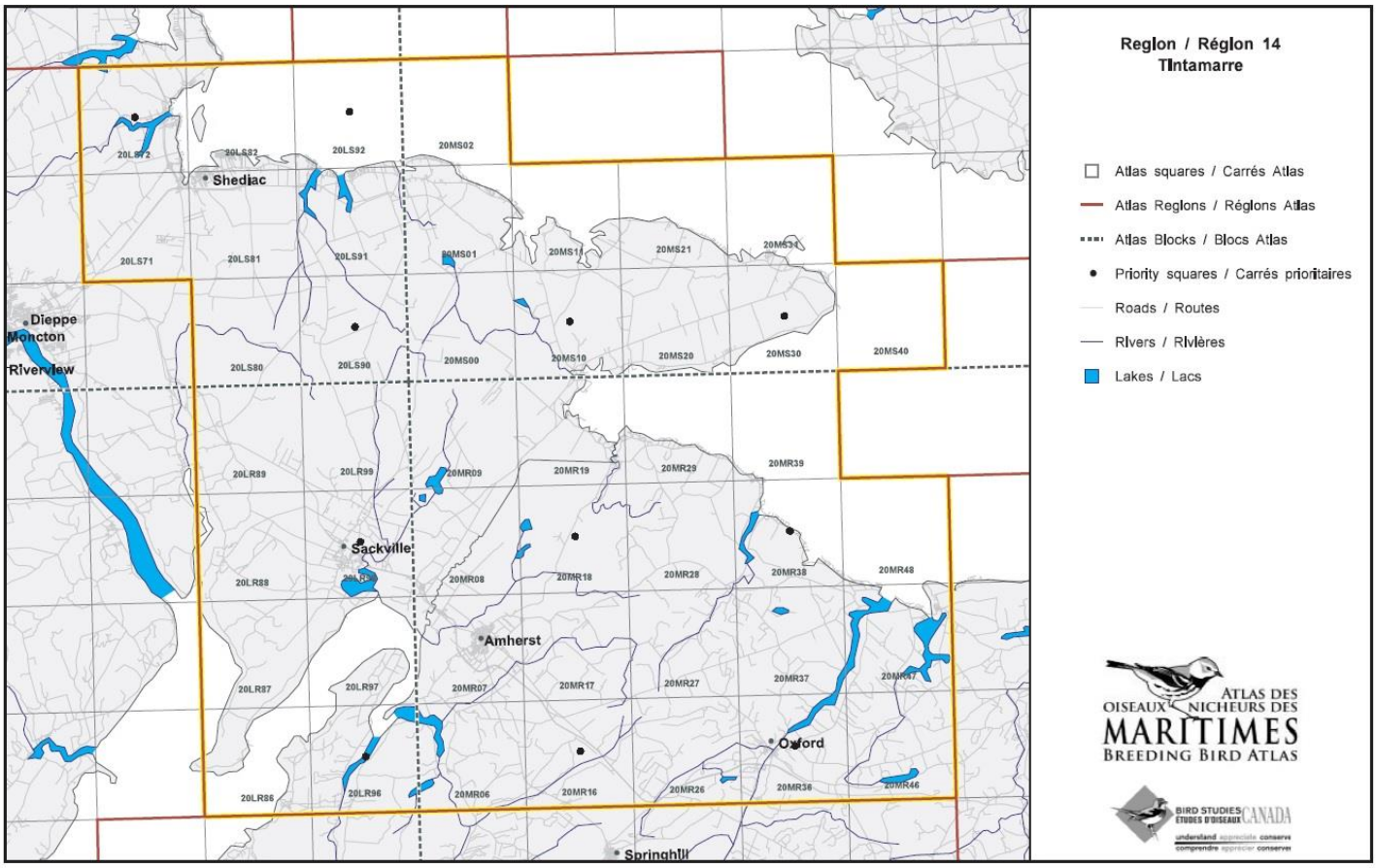

Figure 2 Region #14 Tintamarre and Square 20LS82.

Table 1 Summary of Highest Breeding Evidence for All Bird Species Recorded in Square 20LS82 during Both Atlas Periods.

Scientific Name	Common Name	Highest Evidence of Breeding (1st MBBA, 1985-1990)*	Highest Evidence of Breeding (2nd MBBA, 2005-2010)*	National Protection Status (COSEWIC)	S-Rank	NB Provincial Status Rank	Potential in This Area
Empidonax alnorum	Alder Flycatcher	AY	T		S5B	4 Secure	Yes
Botaurus lentiginosus	American Bittern	H	T		S4B	4 Secure	No
Anas rubripes	American Black Duck	FL	NY		S5B,S4N	4 Secure	Yes
Corvus brachyrhynchos	American Crow	A	CF		S5	4 Secure	Yes
Carduelis tristis	American Goldfinch	A	CF		S5	4 Secure	Yes
Setophaga ruticilla	American Redstart	FL	CF		S5B	4 Secure	Yes
Turdus migratorius	American Robin	AY	NY		S5B	4 Secure	Yes
Anas americana	American Wigeon		FY		S3B	4 Secure	No
Haliaeetus leucocephalus	Bald Eagle		H	NAR	S3B	1 At Risk	No
Riparia riparia	Bank Swallow	NY	AE	T	S3B	3 Sensitive	PO
Hirundo rustica	Barn Swallow	NY	H	T	S3B	3 Sensitive	No
Ceryle alcyon	Belted Kingfisher	ON	CF		S5B	4 Secure	PO
Mniotilta varia	Black-and-white Warbler	AY	A		S5B	4 Secure	PO

Scientific Name	Common Name	Highest Evidence of Breeding (1st MBBA, 1985-1990)*	Highest Evidence of Breeding (2nd MBBA, 2005-2010)*	National Protection Status (COSEWIC)	S-Rank	NB Provincial Status Rank	Potential in This Area
Dendroica fusca	Blackburnian Warbler	H			S5B	4 Secure	No
Poecile atricapillus	Black-capped Chickadee	NE	AE		S5B	4 Secure	Yes
Setophaga caerulescens	Black-throated Blue Warbler		S		S5B	4 Secure	No
Cyanocitta cristata	Blue Jay	H	S		S5	4 Secure	Yes
Vireo solitarius	Blue-headed Vireo	H	S		S5B	4 Secure	No
Anas discors	Blue-winged Teal	T			S4B	4 Secure	No
Dolichonyx oryzivorus	Bobolink	AY	AE	T	S3S4B	3 Sensitive	PO
Molothrus ater	Brown-headed Cowbird	H			S3B	2 May Be At Risk	PO
Wilsonia canadensis	Canada Warbler	A		T	S3S4B	1 At Risk	No
Bombycilla cedrorum	Cedar Waxwing	H	FY		S5B	4 Secure	Yes
Dendroica pensylvanica	Chestnut-sided Warbler	AY	S		S5B	4 Secure	Yes
Spizella passerina	Chipping Sparrow	AY	CF		S5B	4 Secure	Yes
Petrochelidon pyrrhonota	Cliff Swallow		H		S3S4B	3 Sensitive	No
Quiscalus quiscula	Common Grackle	AY			S5B	4 Secure	Yes
Gavia immer	Common Loon		P	NAR	S4B, S5M, S4N	4 Secure	No
Corvus corax	Common Raven	H	FY		S5	4 Secure	Yes
Gallinago gallinago	Common Snipe	T					No
Sterna hirundo	Common Tern	ON	NE	NAR	S3B	3 Sensitive	No
Geothlypis trichas	Common Yellowthroat	FL	FY		S5B	4 Secure	Yes
Junco hyemalis	Dark-eyed Junco		H		S5B	4 Secure	Yes
Picoides pubescens	Downy Woodpecker	FL	FY		S5B	4 Secure	Yes
Sialia sialis	Eastern Bluebird		AE	NAR	S4B	4 Secure	PO
Tyrannus tyrannus	Eastern Kingbird	FL	NY		S3S4B	3 Sensitive	PO
Contopus virens	Eastern Wood-Pewee	T	S	SC	S4B	4 Secure	PO
Sturnus vulgaris	European Starling	NY	FY		SNA	7 Exotic	Yes
Anas strepera	Gadwall		FY		S2B	4 Secure	No
Regulus satrapa	Golden-crowned Kinglet	A	S		S5	4 Secure	Yes
Dumetella carolinensis	Gray Catbird	NY	NY		S4B	4 Secure	Yes
Ardea herodias	Great Blue Heron	NY	AE		S4B	4 Secure	No
Myiarchus crinitus	Great Crested Flycatcher		S		S3B	3 Sensitive	No
Anas crecca	Green-winged Teal		FY		S4S5B	4 Secure	No
Picoides villosus	Hairy Woodpecker		A		S5B	4 Secure	PO
Catharus guttatus	Hermit Thrush	AY	S		S5B	4 Secure	No
Passer domesticus	House Sparrow	NY			SNA	7 Exotic	PO
Haemorhous mexicanus	House Finch		P		SNA	7 Exotic	PO
Charadrius vociferus	Killdeer	FL	NY		S3B	3 Sensitive	Yes
Empidonax minimus	Least Flycatcher	H			S5B	4 Secure	No
Aythya affinis	Lesser Scaup		FY		S4M	4 Secure	No
Dendroica magnolia	Magnolia Warbler	A			S5B	4 Secure	No
Anas platyrhynchos	Mallard	P			S5B,S4N	4 Secure	No

Scientific Name	Common Name	Highest Evidence of Breeding (1st MBBA, 1985-1990)*	Highest Evidence of Breeding (2nd MBBA, 2005-2010)*	National Protection Status (COSEWIC)	S-Rank	NB Provincial Status Rank	Potential in This Area
Falco columbarius	Merlin		H	NAR	S5B	4 Secure	No
Zenaida macroura	Mourning Dove	H			S5B	4 Secure	Yes
Geothlypis philadelphia	Mourning Warbler		S		S4B	4 Secure	No
Vermivora ruficapilla	Nashville Warbler	A	S		S5B	4 Secure	PO
Ammodramus nelsoni	Nelson's Sparrow		AE		S4B	4 Secure	PO
Cardinalis cardinalis	Northern Cardinal		D		S4B	4 Secure	PO
Colaptes auratus	Northern Flicker	FL	A		S5B	4 Secure	PO
Circus cyaneus	Northern Harrier	NY	H	NAR	S4B	4 Secure	No
Parula americana	Northern Parula	H	S		S5B	4 Secure	No
Anas clypeata	Northern Shoveler	H			S2B	4 Secure	No
Pandion haliaetus	Osprey		AE		S4S5B	4 Secure	No
Seiurus aurocapilla	Ovenbird	H			S5B	4 Secure	No
Vireo philadelphicus	Philadelphia Vireo	A			S5B	4 Secure	PO
Podilymbus podiceps	Pied-billed Grebe	H			S4B	4 Secure	No
Carpodacus purpureus	Purple Finch	A	S		S4S5B	4 Secure	PO
Progne subis	Purple Martin	ON			S1S2B	2 May Be At Risk	No
Mergus serrator	Red-breasted Merganser	P	FY		S3B,S4S5N	4 Secure	No
Sitta canadensis	Red-breasted Nuthatch	FL	H		S5	4 Secure	No
Vireo olivaceus	Red-eyed Vireo	H	AE		S5B	4 Secure	PO
Agelaius phoeniceus	Red-winged Blackbird	AY	NY		S4B	4 Secure	PO
Aythya collaris	Ring-necked Duck	P	FY		S5B	4 Secure	No
Phasianus colchicus	Ring-necked Pheasant		NY		SNA	7 Exotic	Yes
Columba livia	Rock Pigeon	NY	NB		SNA	7 Exotic	Yes
Pheucticus ludovicianus	Rose-breasted Grosbeak	H			S4B	3 Sensitive	No
Regulus calendula	Ruby-crowned Kinglet	T	H		S4S5B	4 Secure	Yes
Archilochus colubris	Ruby-throated Hummingbird		H		S5B	4 Secure	Yes
Oxyura jamaicensis	Ruddy Duck		H		S1B, S4N	4 Secure	No
Grus canadensis	Sandhill Crane		T		SNA	8 Accidental	No
Passerculus sandwichensis	Savannah Sparrow	AY	CF		S5B	4 Secure	Yes
Melospiza melodia	Song Sparrow	FL	CF		S5B	4 Secure	Yes
Porzana carolina	Sora	H			S4B	4 Secure	No
Actitis macularius	Spotted Sandpiper	T	FY		S4B	4 Secure	PO
Catharus ustulatus	Swainson's Thrush	H			S5B	4 Secure	No
Melospiza georgiana	Swamp Sparrow	H	CF		S5B	4 Secure	PO
Tachycineta bicolor	Tree Swallow	ON	NB		S4B	4 Secure	Yes
Catharus fuscescens	Veery	H	S		S4B	4 Secure	No
Vireo gilvus	Warbling Vireo	H			S4B	4 Secure	No
Zonotrichia albicollis	White-throated Sparrow	H	FY		S5B	4 Secure	No
Loxia leucoptera	White-winged Crossbill	H			S4	4 Secure	No
Tringa semipalmata	Willet	A	AE		S2S3B	3 Sensitive	PO
Dendroica petechia	Yellow Warbler	AY	CF		S5B	4 Secure	Yes

Scientific Name	Common Name	Highest Evidence of Breeding (1st MBBA, 1985-1990)*	Highest Evidence of Breeding (2nd MBBA, 2005-2010)*	National Protection Status (COSEWIC)	S-Rank	NB Provincial Status Rank	Potential in This Area
Dendroica coronata	Yellow-rumped Warbler	H	FY		S5B	4 Secure	PO

*Breeding Evidence Codes from http://www.mba-aom.ca/jsp/codes.jsp?lang=en&pg=breeding

OBSERVED

X Species observed in its breeding season (no breeding evidence)

POSSIBLE

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

PROBABLE

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code. "T" is not to be used for colonial birds, or species that might forage or loaf a long distance from their nesting site e.g. Kingfisher, Turkey Vulture, and male waterfowl

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole by wrens and woodpeckers

CONFIRMED

NB Nest building or carrying nest materials, for all species except wrens and woodpeckers

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carying fecal sac

CF Adult carying food for young

NE Nest containing eggs

NY Nest with young seen or heard

1.2.3 Species at Risk

WSP requested a data report from the Atlantic Conservation Data Centre (ACCDC) for all rare and uncommon species that have been recorded within proximity to the Project Footprint. The ACCDC Data report includes all rare and uncommon species within 5 km of the Project Footprint.

The ACCDC works with federal and provincial experts to create rarity ranks for species in the Atlantic Canadian Provinces. The ACCDC maintains linked databases to document species occurring in each province and it also maintains the locations at which provincially-rare species are known. The conservation status of each species in each province is assessed in cooperation with other experts and is summarized in a sub-national status rank (S-Rank) (ACCDC, 2015). The s-Rank for each species varies from province to province, which is why each species is ranked provincially as well. The S-ranks have been defined and summarized in Table 2 (ACCDC, 2015).

Table 2 Summary of ACCDC Data S-Rank Definitions (www.accdc.com)

S-Rank	Definition
SX	Presumed Extirpated: Species or community is believed to be extirpated from the province.
S1	Critically Imperiled: Extreme rarity (often 5 or fewer occurrences)
S2	Imperiled: Very few populations (often 20 or fewer) or steep declines
S3	Vulnerable: Vulnerable, recent and widespread declines (often 80 or fewer populations)

S4	Apparently Secure: Uncommon but not rare
S5	Secure: Common or abundant
SNR	Unranked: Province/state conservation not yet assessed
SU	Unrankable: Lack of information
SNA	Not Applicable: A conservation status rank is not applicable because the species is not a suitable target for conservation activities
S#S#	Range Rank: A numeric range rank is used to indicate any range of uncertainty about the status of the species or community
SH	Historic
NOT PROVIDED	Species is not known to occur in the province

The ACCDC data report returned a total of thirty-nine vertebrates, and four invertebrate species records that have been recorded within a 5 km radius. The records have been divided into two categories, Species at Risk (SAR), and Species of Conservation Concern (SCC). A SAR is defined as any wildlife species that is sufficiently threatened to be listed (i.e. protected) by Federal or Provincial Species at Risk Acts or listed as "At Risk" under a provincial general status rank. The wildlife SAR have been summarized in Table 3 and the SCC are summarized in Table 4.

Table 3 Wildlife Species at Risk Recorded Within 5 km of the Study Area

Scientific Name	Common Name	National Protection Status (COSEWIC)	National Protection Status - Species at Risk	s-Rank	NB Provincial Status Rank	Potentially Present
WILDLIFE						
Charadrius melodus melodus	Piping Plover melodus ssp	Endangered	Endangered	S2B	1 At Risk	No
Calidris canutus rufa	Red Knot rufa ssp	Endangered		S3M	1 At Risk	No
Hirundo rustica	Barn Swallow	Threatened		S3B	3 Sensitive	Yes, MBBA
Riparia riparia	Bank Swallow	Threatened		S3B	3 Sensitive	Yes, MBBA
Wilsonia canadensis	Canada Warbler	Threatened	Threatened	S3S4B	1 At Risk	No
Dolichonyx oryzivorus	Bobolink	Threatened		S3S4B	3 Sensitive	Possible, MBBA
Bucephala islandica (Eastern pop.)	Barrow's Goldeneye - Eastern pop.	Special Concern	Special Concern	S2N	3 Sensitive	No
Contopus virens	Eastern Wood-Pewee	Special Concern		S4B	4 Secure	Possible
Podiceps auritus	Horned Grebe	Special Concern		S4M,S4N	4 Secure	No
INVERTEBRATES						
Danaus plexippus	Monarch	Special Concern	Special Concern	S3B	3 Sensitive	Fly over

Based on the data obtained from the MBBA, four bird SAR have been identified with the potential to be found in the Project Area. These species and their associated statuses are presented in Table 3.

1.2.3.1 Barn Swallow

The Barn Swallow is a colonial breeder with other swallows burrowing into soft bank material along rivers, hills or dunes. They prefer to nest near open water as they are aerial foragers. Bank Swallow is ranked as Threatened due to their declining numbers. Barn Swallow is recorded as a Confirmed breeder in this Atlas Square. It is likely that this species of bird may be observed flying and swooping over the Project area foraging for aerial insects due to the proximity to the estuary and saltmarsh. It is unlikely that any nesting habitat is present at the Project site without any buildings or vertical structures to construct their nests.

1.2.3.1 Bank Swallow

The Bank Swallow is a colonial breeder with other swallows burrowing into soft bank material along rivers, hills or dunes. They prefer to nest near open water as they are aerial foragers. Bank Swallow is ranked as Threatened due to their declining numbers. Both Barn and Bank Swallows have been recorded as Confirmed as breeders in this Atlas Square. It

is likely that these birds would be observed flying and swooping over the Project Area foraging for aerial insects. However, it is unlikely that any nesting habitat is present at the Project site due to its flat overall grade with no banks, berms or hills.

1.2.3.3 Bobolink

Bobolink are ground nesters and feed on insects they forage from the ground. Typically they nest in grasslands such as the drier upland parts of a coastal saltmarsh. Bobolink were recorded as Confirmed breeding in both Atlas' and even the small amount of grassland in this Square, relative to the amount of open water, is sufficient for Bobolink.

Habitat within the Project footprint does not include sufficiently developed grassland for Bobolink, though they may be present in nearby wild pasture and upper saltmarsh habitat. It is unlikely that the Project will interact with Bobolink.

1.2.3.4 Eastern Wood-Peewee

Eastern Wood-Peewee is listed as Special Concern, and represents another of the aerial insectivores that have been declining in recent years. This species was recorded as a Probable breeder in the first Atlas and only as Observed during the second Atlas. This species nests in a variety of wooded habitat including mature woodlands, urban shade trees, roadsides, woodlots, and orchards. This species may prefer deciduous forests but can be found in conifer dominated forests as well.

It is unlikely that the small patch of forest on the Project site is useful for Wood-Peewees, and due to the non-confirmed breeding status in this Atlas Square, it is unlikely that this species would interact with the Project.

1.2.3.5 Canada Warbler

The Canada Warbler is a small and brightly colored passerine. Approximately 80% of the entire breeding range for this warbler is located in Canada (COSEWIC 2008), where it can be found breeding in every province and territory except Newfoundland and Labrador and Nunavut. Canada Warbler is ranked as "Threatened" on Schedule 1 of SARA and "At Risk" by NBDNR. The Canada Warbler can be found in a wide range of forest types, including deciduous, coniferous, and mixed wood forests. It is often associated with moist mixed wood forest and riparian shrub forests on slopes and ravines (COSEWIC 2008). The presence of a well-developed shrub layer also seems to be associated with preferred Canada Warbler habitat.

Canada Warbler was observed during the first MBBA and recorded as a probable breeder. This species is not likely to interact with the Project due to the non-availability of likely nesting habitat on the Project site.

1.2.4 Species of Conservation Concern

The data report returned records of thirty vertebrate Species of Conservation Concern (SCC), and three invertebrate Species of Conservation Concern that have been recorded within a 5 km radius of the Project. These wildlife species have been summarized in Table 4.

Table 4 Wildlife Species of Conservation Concern Recorded Within 5 km of the Study Area

Scientific Name	Common Name	National Protection Status (COSEWIC)	National Protection Status - Species at Risk	s-Rank	NB Provincial Status Rank	Potentially Present
WILDLIFE						
Sterna hirundo	Common Tern	Not At Risk		S3B	3 Sensitive	Fly Over
Podiceps grisegena	Red-necked Grebe	Not At Risk		S3M,S2N	3 Sensitive	No
Aythya marila	Greater Scaup			S1B,S2N	4 Secure	No
Oxyura jamaicensis	Ruddy Duck			S1B,S4N	4 Secure	No
Nycticorax nycticorax	Black-crowned Night-heron			S1S2B	3 Sensitive	No
Progne subis	Purple Martin			S1S2B	2 May Be At Risk	Possible
Anas clypeata	Northern Shoveler			S2B	4 Secure	No
Anas strepera	Gadwall			S2B	4 Secure	No
Tringa solitaria	Solitary Sandpiper			S2B,S5M	4 Secure	No
Chroicocephalus ridibundus	Black-headed Gull			S2M,S1N	3 Sensitive	Fly Over
Somateria spectabilis	King Eider			S2N	4 Secure	No
Tringa semipalmata	Willet			S2S3B	3 Sensitive	Possible (at property edge)
Branta bernicla	Brant			S2S3M,S2S3N	4 Secure	No
Loxia curvirostra	Red Crossbill			S3	4 Secure	No
Anas acuta	Northern Pintail			S3B	3 Sensitive	No
Anas americana	American Wigeon			S3B	4 Secure	No
Cathartes aura	Turkey Vulture			S3B	4 Secure	No
Charadrius vociferus	Killdeer			S3B	3 Sensitive	Possible
Larus delawarensis	Ring-billed Gull			S3B	4 Secure	Fly Over
Myiarchus crinitus	Great Crested Flycatcher			S3B	3 Sensitive	No
Mimus polyglottos	Northern Mockingbird			S3B	3 Sensitive	Possible
Molothrus ater	Brown-headed Cowbird			S3B	2 May Be At Risk	Possible
Mergus serrator	Red-breasted Merganser			S3B,S4S5N	4 Secure	No
Pluvialis dominica	American Golden-Plover			S3M	3 Sensitive	No
Melanitta nigra	Black Scoter			S3M,S2S3N	3 Sensitive	No
Calidris maritima	Purple Sandpiper			S3M,S3N	4 Secure	No
Bucephala albeola	Bufflehead			S3N	3 Sensitive	No
Tyrannus tyrannus	Eastern Kingbird			S3S4B	3 Sensitive	Possible
Petrochelidon pyrrhonota	Cliff Swallow			S3S4B	3 Sensitive	No
Morus bassanus	Northern Gannet			SHB,S5M,S5N	4 Secure	No
INVERTEBRATES						
Coccinella transversoguttata richardsoni	Transverse Lady Beetle			S1S2	2 May Be At Risk	Possible
Papilio brevicauda bretonensis	Short-tailed Swallowtail			S3	4 Secure	Possible
Lycaena dospassosi	Salt Marsh Copper			S3	4 Secure	Possible

30 wildlife species not classified as Species at Risk are listed in Table 4 that may have some potential to be within the Study Area. Three Insects may also be found within the Study Area. Based on habitat criteria, only 6 Bird SCC and all 3 of the Insect SCC have been recorded in the Study Area and may have potential habitat available at the Project Site. Only Eastern Bluebird and Killdeer have been Confirmed as breeding in the Atlas Square.

1.2.4.1 Eastern Bluebird

The Eastern Bluebird is a small thrush. Males are a vivid, deep blue above, with a rusty throat and breast. This species occurs in the southern regions of New Brunswick and Ontario. Eastern Bluebird is ranked as Sensitive by NBDNR. This ground-foraging, insectivorous species prefers open and grassland habitats, which facilitate locating and capturing prey (Cornell Lab of Ornithology 2011). Competition with introduced European Starlings and House Sparrows may have contributed to the decline of this species.

The open fields, hedgerows and forested patches around the Study Area offer this species opportunities for nesting. The Project Site is limited in the amount of habitat for either foraging or nesting, but it is likely that this species would be observed from the Project. Eastern Bluebird was Confirmed as breeding in the second Atlas.

1.2.4.2 Killdeer

The Killdeer has a NBDNR rank of "Sensitive" and is ranked S3B in NB by the AC CDC (2012); it has no status with COSEWIC or SARA, although is a candidate species for assessment by COSEWIC. Killdeer are ground nesters that can be found in open areas such as fields and mudflats and are often found in urban areas such as golf courses and parking lots (Cornell Lab of Ornithology 2011). During the summer nesting season, it would be likely to encounter a nesting Killdeer pair on the ground that is intended for the Project.

Killdeer was reported in both MBBA Atlas' as a Confirmed breeder.

1.2.4.3 Eastern Kingbird

The Eastern Kingbird is a medium-sized fly catcher with a large head that is white below and blackish above. This species occurs in New Brunswick throughout the summer breeding months. Eastern Kingbirds often perch along utility lines, fences or atop trees. The aerial insectivorous species is a visual hunter, flying out from perches to snatch flying insects (Cornell Lab of Ornithology, 2011).

Eastern Kingbird are ranked as Sensitive in New Brunswick and assigned an S3S4B rank. They are considered secure to vulnerable throughout their range in New Brunswick. This Project will not exclude any existing habitat that a Kingbird may use, either nesting or foraging. Restricting the footprint of the Project to the current infilled boundary is good mitigation for aerial insectivores such as kingbirds who rely on flying out from a perch to forage for aerial insects. Eastern Kingbird was recorded as a Confirmed breeder in this Atlas Square during both MBBA. This Project is unlikely to interact with this species.

1.2.4.4 Brown-headed Cowbird

The Brown-headed is a smallish blackbird. Males have a glossy black plumage and a rich brown head that often looks black from a distance. This species occurs in New Brunswick during the summer breeding months. Brown-headed Cowbirds are found in open habitats such as pastures, meadows, fields, lawns with mixed species groups of blackbirds and starlings feeding on the ground (Cornell Lab of Ornithology, 2011).

Brown-headed Cowbird are ranked as May-be-at-Risk in New Brunswick and assigned an S3B rank, vulnerable. This Project will not interact negatively with this species, it may even benefit cowbirds by aiding this species to be more successful as the Project will create more edge. Species that nest in edges are more susceptible to nest parasitism. Cowbirds generally lay one egg in several nests and leave the egg and chick to be raised by the host adult. This species was only recorded as a Possible breeder in the first MBBA.

1.2.4.5 Purple Martin

The Purple Martin is a very large swallow. Adult males are iridescent, dark blue-purple with brown/black wings and tail. This species occurs in southern regions of New Brunswick during the summer breeding months. Purple Martins often roost in flocks mixed with other species of swallows and are an aerial insectivorous species that feed in midair, catching large insects. Purple Martins feed in open areas, especially near water and are colonial nesters, nesting with dozens of martins in the same spot (Cornell Lab of Ornithology, 2011).

Purple Martin are ranked as May-be-at-Risk in New Brunswick and assigned an S1S2B rank. They are imperiled to critically imperiled throughout their range in New Brunswick. This Project will not exclude any habitat that a Purple Martin may use, either nesting or foraging. Restricting the footprint of the Project to the current infilled boundary is good mitigation for aerial insectivores such as martins who rely on open spaces, usually over open water for foraging. This Project is unlikely to interact with this species.

1.2.4.6 Northern Mockingbird

The Northern Mockingbird is a medium-sized songbird. Mockingbirds are paler on the breast and belly, with two white wing bars on each wing, but are overall gray-brown. The Northern Mockingbird is found in New Brunswick year round. Northern Mockingbirds are generally found in backyards, parks, forest edges and open land at low elevations. They are generally found sitting high on fences, eaves or telephone wires and aggressively chase off intruders on their territory (Cornell Lab of Ornithology, 2011).

Northern Mockingbird are ranked as Sensitive in New Brunswick and assigned an S3B rank, or vulnerable. This bird prefers thickets and hedgerows in urban parks. This species is unlikely to interact with the Project. No Northern Mockingbird were recorded within the Atlas Square during either MBBA.

1.2.4.7 Willet

The Willet is a large, stocky shorebird. Willets are gray or brown birds that display a striking white and black stripe along each wing when flying. The Willet is found in southern regions of New Brunswick during summer breeding months. Eastern Willets nest in coastal saltmarshes on islands and barrier beaches. In the winter, Willets feed on rocky coasts, mudflats, beaches and marshes (Cornell Lab of Ornithology, 2011).

Willet are ranked as Sensitive in New Brunswick and assigned an S2S3B rank. They are vulnerable to imperiled throughout their range though they can be locally abundant. Willet, if any, may be found adjacent to the Project in the coastal marsh. Willet are regular breeders at a smaller parcel of coastal marsh within Parlee Beach Provincial Park.

1.2.4.8 Transverse Lady Beetle

Coccinella transversoguttata is native to North America, with populations in western Canada, western United States, and into Mexico. They can now also be found in Europe, Asia (except China), and Central America. In the past, *Coccinella transversoguttata* covered much of the eastern United States and Canada, but non-native lady beetle species that have moved into North America have caused populations of *C. transversoguttata* to decrease significantly.

Transverse Lady Beetle live in open areas, such as old fields, agricultural fields, meadows, and marshes, where it feeds on pest insects. It is often found on woody plants, crops, and other flowering plants.

Transverse Lady Beetle is ranked as May be At Risk in New Brunswick with an S-rank of S1S2, or Imperiled to Critically Imperiled.

1.2.4.9 Short-tailed Swallowtail

This butterfly species is found only in the Maritime Provinces and those parts of Quebec surrounding the Gulf of St. Lawrence west to St. Fulgence, Quebec. *Papilio brevicauda* has never been recorded from Prince Edward Island, although it is regularly seen on the New Brunswick coast close to the island. The subspecies *bretonensis* occurs on Cape Breton Island and the north shore of New Brunswick. In addition to gardens, this butterfly is often found in coastal areas, where it can be seen flying over grassy clifftops and rocky beaches. It is widespread in Newfoundland, but in New Brunswick, this species is local, and uncommon.

The Project site may have floral species associated with larval feeding such as cow-parsnip (*Heracleum spp*.), Angelica (*Angelica atropurpurea*), and Scotch Lovage (*Ligusticum scoticum*). Adjacent fields and drier edges of the saltmarsh will also have these plant species. During the summer flying season, it is difficult to pinpoint the rearing location of butterfiles. The Project will not interact with the saltmarsh or any rocky shoreline habitat that is preferred by this species.

Short-tailed Swallowtail is ranked as Secure in New Brunswick even though its S-rank is S3, or Vulnerable.

1.2.4.10 Saltmarsh Copper

Salt Marsh Copper is restricted to salt marshes where its host plant, Egede's Silverweed (*Argentina egedii*), is found. Adults can be found well out in the marsh nectaring at Sea Lavender (*Limonium nashii*) or along marsh edges nectaring at Seaside Goldenrod (*Solidago sempervirens*) and other wildflowers.

Saltmarsh Copper is ranked as Secure in New Brunswick even though its S-rank is S3, or Vulnerable.

1.2.5 Mature and Interior Forest Habitat

Theo Popma, of Overdale Environmental provided forest-cover data within the Project area. The information was used to identify mature and interior forest, which are important habitats for a number of wildlife species in New Brunswick including birds. "Mature forest" is defined as forest stands that have developmental stages that include "immature-old", "mature" or "overmature". "Interior forest" was defined as contiguous patches of mature forest that are greater than 10 ha and at least 100 m away from edges such as roads, transmission lines, agricultural areas, urban and industrial areas.

The forest within the Project site is dry Red Pine (*Pinus rubus*) mixed with Poplar (*Populus tremuloides*). It is not considered mature and the Project site does not have any patches of forest that are greater than 10 ha. Therefore, there are no Interior forest patches within the PDA.

1.2.6 Other Specialized or Managed Habitats.

The wetland bordering the Project site is a Provincially Significant Wetland (PSW) coastal saltmarsh. Coastal saltmarshes are important breeding and rearing grounds for fish and many varieties of birds and other wildlife. The Project is not expected to encroach upon the PSW habitat although Construction and Operation of the Project may disturb wildlife to some degree during the summer season.

The ACCDC report included a list of managed areas within 5 km of the Study Area. The managed areas within the database search included Parlée Beach Provincial Park.

Table 5 Managed Areas Within 5 km of the Study Area

Managed Area Name	Type of Land	North*	West*	Distance to Project Footprint	Owner	Description
Parlee Beach	Provincial Park	46.2380	64.5080	Approx 2 km	N.B. Economic Development and Tourism	Beach

No Environmentally Sensitive Areas (ESAs) are known within 5 km of the Project site. The Parlee Beach Provincial Park is a managed site immediately adjacent to the Project. It is likely that the nearby barasway and coastal wetland habitat are a significant area for fall staging for migratory waterfowl, and some migratory waterfowl and shorebirds likely nest there in the summer. The Project should not have an impact on these nesting species.

As of May, 2014, the ACCDC has been mandated by the Department of Natural Resources in Nova Scotia and New Brunswick to consider records of certain species as "location-sensitive". In an attempt to reduce the risk that these species will be exploited, precise locations of these are only distributed to authorized individuals or organizations, and those requesting data are referred to DNR regional biologists for further information (ACCDC, 2016). For location sensitive species, see Table 6. None of these location sensitive species are thought to be present within the Project footprint or be impacted by the Project.

No other locations of critical or sensitive habitat are known within the Project Site or located within 5 km of the Project Site. Suitable habitat for wood turtle, snapping turtle, or painted turtle is not available in the Project footprint.

Table 6 Location Sensitive Species Known with 5 km of Study Area

Scientific Name	Common Name	SARA	Known within 5 km of Study Site
Chrysemys picta picta	Eastern Painted Turtle		No
Chelydra serpentina	Snapping Turtle	Special Concern	No
Glyptemys insculpta	Wood Turtle	Threatened	No
Haliaeetus leucocephalus	**Bald Eagle**	**NAR**	**Yes, Fly Over Project Only**
Falco peregrinus pop. 1	**Peregrine Falcon - anatum/tundrius pop.**	**Special Concern**	**Yes, Fly Over Project Only**
Cicindela marginipennis	Cobblestone Tiger Beetle	Endangered	No
Coenonympha nipisiquit	Maritime Ringlet	Endangered	No
Bat Hibernaculum		[Endangered][1]	No

[1] *Myotis lucifugus* (Little Brown Myotis), *Myotis septentrionalis* (Long-eared Myotis), and *Perimyotis subflavus* (Tri-colored Bat or Eastern Pipistrelle) are all Endangered under the Federal Species at Risk Act and the NB Species at Risk Act.

1.3 Recommended Mitigation Measures

The following sections present recommended mitigation measures which are expected to reduce the adverse effects of the Project on birds and bird habitat.

1.3.1 Construction

1.3.1.1 Potential Environmental Effects

Construction will result in the permanent loss of some habitat for some wildlife and bird species, and the creation of edge habitat. The environmental effects of clearing and grubbing are most severe when these activities are conducted during the period when most wildlife and bird species are denning/breeding/nesting (May 1 to August 31). Clearing and grubbing at this time could result in the direct mortality of eggs and unfledged nestlings. The killing of birds or the destruction of their nests, eggs, or young is not compliant with the *MBCA*.

There is the potential for some suitable habitat for SAR and SCC would be lost in the Project Area as a result of Project activities.

Should site preparation activities other than clearing (e.g., grubbing and grading) could take place during the May to September period, this may result in the disturbance of some ground-nesting birds, including SAR and SCC.

1.3.1.2 Mitigation Measures

Clearing should be conducted outside of the breeding period of most migratory birds, to avoid potential direct adverse environmental effects on nesting birds.

Clearing should be kept to a minimum, and travel outside of the Project area should be limited. For safety reasons, some clearing is necessary to improve visibility of wildlife crossing the road. The area cleared should be as narrow as practical to reduce the amount of lost habitat.

Mitigation for the protection of SAR is to limit clearing to the minimal amount required for the Project and to conduct clearing outside the breeding season.

If nesting birds are observed within the areas where construction is to occur, an appropriate buffer (in consultation with the Canadian Wildlife Service (CWS) and/or NBDNR) should be maintained and observed until the birds have fledged.

1.3.2 Operation and Maintenance

1.3.2.1 Potential Environmental Effects

Project presence, including campground use and lighting, may result in ongoing disturbance to birds, affecting the quality of habitat adjacent to the Project. Light, noise or air pollutants can degrade adjacent bird habitat. Some birds can become habituated to traffic noise and disturbance after an initial time to adjust. Low amounts of air pollutants are expected, and are not considered likely to affect bird populations. Wind and other weather events will quickly dissipate instances of low air quality.

Vegetation management will occur within the Project area. Vegetation management can be viewed as a potential positive or adverse environmental effect. Removing vegetation from the roadsides could remove edge habitat artificially created during Construction in which some birds forage.

1.3.2.2 Mitigation Measures

Vegetation maintenance activities should be conducted in compliance with the *MBCA*, which states that no person shall kill, injure, or harass a migratory bird.

If nesting birds are observed within the areas where vegetation maintenance occurs, an appropriate buffer should be maintained and observed until the birds have fledged.

No herbicides should be used to control vegetation growth that could potentially have adverse environmental effects on birds.

1.3.3 Accidents, Malfunctions and Unplanned Events

Hazardous Materials Spills

Known hazardous materials that will be used during Construction and Operation and Maintenance include fuels, lubricants, solvents and antifreeze. It is likely that hazardous materials may be present during the Operation of the Project, and while the possibility is remote, an accident involving the trans-shipment of hazardous materials could result in a spill of this material into the environment. Such a spill could degrade wildlife habitat in the adjacent saltmarsh PSW. A chemical spill has the potential to spark a fire that could destroy wildlife or wildlife habitat adjacent to the Project Area.

Hazardous materials should be stored properly, and in compliance with all appropriate guidelines. The EPP for the Project will contain procedures for dealing with hazardous material spills, and requirements that spill kits are available on site.

Fire

The potential environmental effects of fire on bird and wildlife habitat could potentially be devastating to a local bird population in the area, such as colonially nesting swallows. A major fire could destroy large amounts of habitat, and some birds may not be able to avoid such an event, including young or nestlings. Fire could originate from sparks from machinery, lightning strikes or as a result of a hazardous materials spill. Major fires caused during construction or operation of a campground are rare.

Table 5.1 presents a summary of all of the recommended mitigation measures for the construction of the Project in regards to birds.

Table 7 Summary of Recommended Mitigation Measures for the Construction and Operation of the Project.

Summary of Potential Effects to Wildlife	Best Management Practices for Projects	Recommended Mitigation Measures Besides BMP for Construction
Construction		
- Loss of Habitat - Change in Habitat Quality - Disturbance to Wildlife and Birds - Direct Mortality of Wildlife and Birds	- Working near Environmentally Sensitive Areas: no fueling or storage of petroleum products within 30 m of a watercourse or wetland; - Avoid contact with Wildlife, keep work site clean and free of food waste; - Use dust control (water) when necessary	- Avoid work in areas where nesting birds are observed until the birds have fledged - Limit Project related activity outside the Project footprint - Limit the amount of clearing of vegetation and disturbance to that which is necessary
Operation and Maintenance		
- Loss of Habitat - Change in Habitat Quality - Disturbance to Wildlife and Birds - Direct Mortality of Wildlife and Birds		Conduct vegetation management activities in compliance with *MBCA*
Accidents, Malfunctions and Unplanned Events		
- Loss of Habitat - Change in Habitat Quality - Disturbance to Wildlife and Birds - Direct Mortality of Wildlife and Birds		No Additional Mitigation measures are anticipated to be required.

Wetland VEC & Vegetation VEC

Wetland VEC

Introduction

A wetland assessment was carried out on on PID 70429899 on June 14, 2016. While the bulk of the property is upland habitat, Provincially Significant Wetland (PSW) was identified directly adjacent to the survey site. This PSW consisted of Saltmarsh habitat of greater than 2 hectares in size. Draining into the saltmarsh was a small watercourse, the Little Barachois River, which harboured some freshwater Fen wetland.

Wetland habitats were described as being atypical, meaning they were under the influence of human activity. This is primarily due to the seawall on the western boundary of the property but also to sedimentation runoff down steep banks from adjacent fields . Because of this unnatural boundary and its influence on drainage, transitional habitat often present at the edges of wetlands was either absent or altered.

Datapoints

The delineation of the wetland was carried out by gathering data at 11 locations:
(see photos in Figures 1 through 11 in Appendix II and datasheets in Appendix III)

Datapoint 1 was sampled on the upland side of the seawall in the field dominated by weedy, upland plants such as Clover and Yarrow. No hydrological indicators were observed. Soils consisted of well-drained sandy-gravel substrate used for backfilling.

Datapoint 2 was sampled at the base of the seawall near Datapoint 1. This point constituted a small raised dune of alluvial sediment pushed or blown up agains the wall. Saltmarsh vegetation such as Smooth Cord Grass dominated the site.

Datapoint 3 constituted the saltmarsh proper with Saltmarsh Bulrush and Smooth Cord Grass dominating the herb stratum. Soils were inundated and Hydrogen Sulfide odor was present.

Datapoint 4 represents the only instance where habitat at the base of the seawall was found to be upland. With sedimentation and drainage affected by the wall, hydric soil and hydrology indicators were absent, although wetland indicator species of plants were still present.

Datapoint 5 represented wetland habitat but not that of the saltmarsh of datapoints 2 and 3. With Spiraea dominating and depleted soils, this point represents a unique pocket only a few meters wide likely created as a result of the presence of the seawall.

Datapoint 6 was dominated by Clover, Spiraea and Birch. The seawall is no longer present for this and all subsequent datapoint. Microtopographical relief is still present in the form of a steep bank of several feet in height. Soils did contain some depletion but of insufficient depth and thickness to constitute a hydric soil. Hydrological indicators were absent.

Datapoints 7, 8 and 9 represent the edge of upland meadow and forest habitats present before infilling. No hydrological or hydric soil indicators were found to be present.

Datapoint 10 represents the Fen habitat which travels through a narrow man-made bottleneck out into the saltmarsh. By all indications this seems to be a freshwater wetland environment

although some influence from the estuary must be present. No plants of specifically coastal habitats were present, however. This wetland habitat extends away from the saltmarsh until it narrows into a channel constituting the Little Barachois River.

Datapoint 11 confirms that the low-lying areas in the field are not wetlands, although they were inundated with rainwater at the time of the survey.

Wetland types:

Two wetland types were observed: Saltmarsh and Fen. The intersection of these two zones occurs through a derelict culvert and rudimentary stone dam which is likely 30 years old or more. Because of this barrier, both wetland types are fairly distinct, although there is some transitional habitat occupying approximately 30m on either side of the barrier. Channelization is distinct, especially downstream of the culvert where the banks are several feet deep.

The Saltmarsh generally adhered to the artificial boundary created by the seawall in all instances except a small patch of shrubs where sediments failed to demonstrate characteristics of hydric soils.

Within the Fen there are at least two primary channels which support small sandy floodplains. The bulk of the Fen is dominated by Reed Canary Grass and Spotted Touch-me-not. The most uncommon plants found during the survey were found here: Rough Horsetail (*Equisetum hyemale*) and Water Loosestrife (*Lysimachia thyrsiflora*).

Recommendations:

Care should be taken during all phases of the proposed project to avoid Saltmarsh (PSW) habitat found below the Seawall. This could be achieved by clearly marking the 15-30m buffer around the wetland. The same is true for the Fen Wetland to the south.

Summary:

Wetlands were surveyed on and adjacent to the proposed project area. Both Fen wetland and Coastal Saltmarsh wetland were identified, described and delineated both on and adjacent to the PID.. Wetland habitat was confirmed to be absent from low-lying areas in the field which occupies the majority of the area of the PID.

Vautour EIA Beaubassin-Est - Vegetation VEC

Introduction:

Vegetation and wetland surveys were conducted on June 13 and 14 of 2016. No species of vascular plants of conservation concern were identified. PSWs, however, are known to contain potential significant habitat for species at risk. Both the ACCDC and NB Museum provided records of populations of rare plants found in similar coastal habitats in neighbouring estuaries within 5km of the site:

NB Museum:

Scientific Name	Common Name	Srank	GSrank
Stellaria crassifolia	Fleshy Stitchwort	S1	2 May Be At Risk
Carex albicans var. emmonsii	White-tinged Sedge	S2	3 Sensitive
Stellaria humifusa	Saltmarsh Starwort	S3	4 Secure
Amelanchier canadensis	Canada Serviceberry	S3	4 Secure
Comandra umbellata	Bastard's Toadflax	S3	4 Secure
Suaeda calceoliformis	Horned Sea-blite	S3S4	4 Secure
Rumex maritimus	Sea-Side Dock	S3S4	4 Secure
Distichlis spicata	Salt Grass	S3S4	4 Secure
Montia fontana	Water Blinks	SH	2 May Be At Risk

ACCDC:

Scientific Name	Common Name	Srank	GSrank
Lechea maritima	*Beach Pinweed*	S2	3 Sensitive
Comandra umbellata	*Umbellate Bastard Toad-Flax*	S3	4 Secure
Teucrium canadense	*American Germander*	S3	4 Secure
Distichlis spicata	*Seashore Saltgrass*	S3S4	4 Secure
Carex cryptolepis	*Northeastern Sedge*	S4	4 Secure
Carex mackenziei	*Mackenzie Sedge*	S4	4 Secure
Honckenya peploides	*Sea-Beach Sandwort*	S4	4 Secure
Carex hormathodes	*Marsh Straw Sedge*	S4S5	4 Secure
Carex silicea	*Sea-Beach Sedge*	S4S5	4 Secure

Site-directed surveys in preferred habitat for each of these species failed to identify any occurrences of these elements. Since several of the above genera also contain species commonly found in the survey area, it was therefore necessary to distinguish between both rare and common species from the same genera such as with *Amelanchier*, *Stellaria*, *Carex* and *Lechea.*

The plantlist showing all species identified during the survey and their ranks is shown in Appendix IV.

Habitats (See habitat map and photos in Figures 1 through 8 in Appendix I).

Roadside:

The roadside included both graminoid and tall-shrub-dominated habitats. Both were significantly disturbed by human activities and contained an abundance of non-native species. Drainage, as expected was poor with pooling water visible in some areas. No obvious hydrological connection between the ditch and the Little Barachois River was observed.

Roadside Dominant Species:

Scientific Name	Common Name	Srank
Prunus virginiana	Choke Cherry	S5
Spiraea alba	Narrow-Leaved Meadow-Sweet	S5
Bromus inermis	Awnless Brome	SNA
Alnus incana	Speckled Alder	S5
Rosa virginiana	Virginia Rose	S5
Amelanchier x neglecta	Running Serviceberry	SNA

Field, Meadow and clearings

The open areas were primarily dominated by a variety of grasses. In some areas these open areas resembled mowed lawns and in others there seemed to be some natural recovery taking place to merit the term “meadow”. What is now Field habitat used to be either Saltmarsh or Forest depending on its proximity to the coastline. Both habitats have been filled in to create a level building lot. Some evidence of forest succession still exists among the grasses and weeds, especially in low-lying areas prone to flooding with a few inches of water during heavy rains (such as during the time of survey). In addition, the instability of the sandy fill seems to have created zones devoid of vegetation which could be referred to as “barrens”. Collectively, these microhabitats make up the large brown field as a whole.

Graminoid-dominated Field dominant species:

Scientific Name	Common Name	Srank
Calamagrostis canadensis	Blue-Joint Reedgrass	S5
Phleum pratense	Meadow Timothy	SNA
Lolium pratense	Meadow Rye Grass	SNA
Prunella vulgaris	Self-Heal	S5
Carex pallescens	Pale Sedge	S5
Galium asprellum	Rough Bedstraw	S5
Poa pratensis	Kentucky Bluegrass	S5
Carex stricta	Tussock Sedge	S5
Trifolium pratense	Red Clover	SNA

Flooded Field Dominant Species

Scientific Name	Common Name	Srank
Viola sp.	a Violet	
Lupinus polyphyllus	Large-Leaved Lupine	SNA
Iris versicolor	Blueflag	S5
Anthoxanthum odoratum	Sweet Vernal Grass	SNA
Carex stipata	Stalk-Grain Sedge	S5
Osmunda cinnamomea	Cinnamon Fern	S5

Field dominated by exotic species

Scientific Name	Common Name	Srank
Calystegia sepium	Hedge Bindweed	S5
Galeopsis tetrahit	Brittle-Stem Hempnettle	SNA
Tanacetum vulgare	Common Tansy	SNA
Hieracium caespitosum	Meadow Hawkweed	SNA
Oenothera perennis	Small Sundrops	S5
Leucanthemum vulgare	Oxeye Daisy	SNA
Stellaria graminea	Little Starwort	SNA
Vicia cracca	Tufted Vetch	SNA
Luzula multiflora	Common Woodrush	S5
Fragaria virginiana	Virginia Strawberry	S5
Potentilla simplex	Old-Field Cinquefoil	S5

Forest

Forests were dominated by a mixture of species including Red Pine (*Pinus resinosa*) and Jack Pine (*Pinus banksiana*). Forests were dry and sandy with an open understory supporting very few herbs and shrubs. This habitat was confined to a strip left standing along the road to the east. Several species suited to the nearby meadow had infiltrated several meters into the edges of the forest. Despite this, diversity was relatively high likely due to the maturity of the stand being upwards of 50 years.

Forest Dominants Species

Scientific Name	Common Name	Srank
Acer rubrum	Red Maple	S5
Betula populifolia	Gray Birch	S5
Pinus resinosa	Red Pine	S4S5
Pinus banksiana	Jack Pine	S5
Amelanchier x neglecta	Running Serviceberry	SNA
Picea glauca	White Spruce	S5
Acer platanoides	Norway Maple	SNA
Prunus virginiana	Choke Cherry	S5
Alnus incana	Speckled Alder	S5
Frangula alnus	Glossy Buckthorn	SNA
Maianthemum canadense	Wild Lily-of-The-Valley	S5
Dryopteris intermedia	Evergreen Woodfern	S5

Forested Bank

On both sides of the Fen are steep banks ranging in height from 1 to 3 meters. These banks are forested but contain a different species composition than the forested habitat mentioned above. This habitat is heavily influenced by the weedy species of the nearby fields but still contains several native dominants. Rough Horsetail (*Equisetum hyemale*) was the only other S4 species found during the survey. It was locally common in this relatively rich habitat.

Dominant Species on Forested Bank

Scientific Name	Common Name	Srank
Acer platanoides	Norway Maple	SNA
Prunus virginiana	Choke Cherry	S5
Sorbus americana	American Mountain-Ash	S5
Carex debilis	White-Edge Sedge	S5
Solidago rugosa	Rough-Leaf Goldenrod	S5
Rubus idaeus	Red Raspberry	S5

Saltmarsh

The coastal saltmarsh consisted of a dominance of the Cord Grasses (*Spartina* spp.) and Saltmarsh Bulrush (*Schoenoplectus pungens*). However, near the seawall some transitional habitat had formed from the incursion of shrubs such as Roses, Meadowsweet and Sweet Gale. Some microhabitats resembling dunes consisting of raised mounds of alluvial sands have also formed at the base of the wall.

Saltmarsh Dominant-Species

Scientific Name	Common Name	Srank
Hierochloe odorata	Holy Grass	S5
Carex paleacea	Chaffy Sedge	S5
Schoenoplectus pungens	Three-Square Bulrush	S5
Spartina alterniflora	Saltwater Cordgrass	S5
Spartina patens	Salt-Meadow Cordgrass	S5
Spartina pectinata	Fresh Water Cordgrass	S5
Juncus balticus	Baltic Rush	S5

Fen

The Fen appears to be relatively independent of the influence of the nearby marine environment likely due to an artificial constriction of the channel apparently constructed some decades ago. Dominant species are those which are typical for freshwater wetlands and offer moderate species diversity. With well-defined banks and channels as well as small pools of open, stagnant water, the sandy substrate is ideal for a good to fair diversity of wetland plants.

Fen Dominant Species

Scientific Name	Common Name	Srank
Phalaris arundinacea	Reed Canary Grass	S5
Impatiens capensis	Spotted Jewel-Weed	S5
Symphyotrichum puniceum	Swamp Aster	S5
Scirpus microcarpus	Small-Fruit Bulrush	S5
Glyceria canadensis	Canada Manna-Grass	S5
Solanum dulcamara	Climbing Nightshade	SNA
Echinocystis lobata	Wild Mock-Cucumber	S5

Recommendations:

With no species at risk or significant habitat found on the PID during the survey, no special recommendations of mitigation is recommended pertaining to the vascular plant flora.

Summary:

No species of conservation concern were identified during the survey despite the fact that the area is known to have good potential for the occurrence of rare plants. At least six distinct habitats were described based on differing compositions of dominant species. Within the Disturbed Meadow habitat, which dominated the site, several smaller poorly drained and well-drained microhabitats were noted but not mapped. The majority of the area of the Saltmarsh was outside of the PID but was well-surveyed because of its close proximity to the site and its potential for harboring species at risk.

Appendix I – Habitat Photos

Vautour EIA Habitat Map Overdale Environmental Figure 1

Red – Forest
Green – Saltmarsh
Oranges – Field and smaller low-lying area in field
Blue – Fen
Purple – Forested Bank

Vautour EIA	Wet meadow near ditch	Overdale Environmental	Figure 2

Vautour EIA	Roadside shrubs	Overdale Environmental	Figure 3

Vautour EIA Meadow Overdale Environmental Figure 4

Vautour EIA Fen Overdale Environmental Figure 5

Vautour EIA Mixed Woods Overdale Environmental Figure 6

Vautour EIA Low lying meadow Overdale Environmental Figure 7

Vautour EIA Barren meadow Overdale Environmental Figure 8

Appendix II – Wetland Datapoint Photos

Vautour EIA	Datapoint 1	Overdale Environmental	Figure 1

Vautour EIA	Datapoint 2	Overdale Environmental	Figure 2

Vautour EIA	Datapoint 3	Overdale Environmental	Figure 3

Vautour EIA	Datapoint 4	Overdale Environmental	Figure 4

Vautour EIA	Datapoint 5	Overdale Environmental	Figure 5

Vautour EIA	Datapoint 6	Overdale Environmental	Figure 6

Vautour EIA	Datapoint 7	Overdale Environmental	Figure 7

Vautour EIA	Datapoint 8	Overdale Environmental	Figure 8

Vautour EIA	Datapoint 9	Overdale Environmental	Figure 9

Vautour EIA	Datapoint 10	Overdale Environmental	Figure 10

Vautour EIA	Datapoint 11	Overdale Environmental	Figure 11

Appendix III - Datasheets

Project Site:	Beaubassin	Date:	15-Jun-16	Sample Point: 1	Job #:
Client/owner:	Pierre Vautour	Field Investigator(s):	Theo Popma		
County:	Westmorland	Coordinates:	46.2341 x 64.4937		
PID 861443		Do normal environmental conditions exist on-site?		Yes [ ]	No [x]

If no, explain: Very rainy for nearly a week

Atypical Situation? Yes [x] No [ ] Explain: Recently backfille up to 7 feet deep

Is this a potential **Problem Area?** Yes [ ] No [x] Explain:

Wetland Determination

(Check One Only For Each Criteria)

Dominant Hydrophytic Vegetation (50/20 rule)	Yes [x]	No [ ]
Wetland Hydrology	Yes [ ]	No [x]
Hydric Soils	Yes [ ]	No [x]

Wetland Type:

Rational for Determination:

Wetland Determination

[ ] **YES** [x] **NO**

Vegetation

	Tree Stratum: (Plot size: 9m2)	%Cover		Dominant Species	Indicator Status
1	*none*				
2					
3					
4					
5					
6					
		0	=	**Total Cover**	
	Shrub Stratum: (Plot size: 5m2)				
1	*Prunus virginiana*				*fac*
2	*Sambucus racemosa*				*facu*
3					
4					
5					
		0	=	**Total Cover**	
	Herb Stratum: (Plot Size: 1m2)				
1	*Trifolium pratense*	20		x	*facu*
2	*Equisetum arvense*	10		x	*fac*
3	*Cerastium fontanum*	5		x	*fac*
4	*Fragaria virginiana*	5		x	*fac*
5	*Achillea millefolium*	5		x	*facu-*
	Vicia cracca	5		x	*fac*
		50	=	**Total Cover**	

Comments

Dominance Test Worksheet:

# of Dominant Species that are OBL,FACW,FAC:	5
Total # of Dominant Species across all strata:	8
% of Dominant Species that are OBL,FACW,FAC:	62.5

Prevalence Index Worksheet:

	Total %Cover of:	Multiply by:	
OBL Species		x 1 =	0
FACW Species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
ULP Species		x 5 =	0
Column Totals:	0		0

Prevalence Index = B/A = ##

Hydrophytic Vegetation Indicators:

x	Rapid Test for Hydrolic Vegetation
x	Dominance Test is >50%
	Prevalence Index is ≤3.0 [1]
	Morphological Adaptations[1] (explain)
	Problematic Hydrophytic Vegetation[1](explain)

[1]Indicators of hydric soil and weland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** x **No**

Hydrology

Primary Hydrological Indicators: (minimum of one is required;check all that apply) 1

___	Surface Water (A1)	___	Water Stained Leaves (B9)
___	High Water Table (A2)	___	Aquatic Fauna (B13)
___	Saturation (A3)	___	Marl Deposits (B15)
___	Watermarks	___	Hydrogen Sulfide Odor (C1)
___	Sediment Deposits (B2)	___	Oxidized Rhizospheres on Living Roots (C3)
___	Drift Deposits (B3)	___	Presence of Reduced Iron (C4)
___	Algal Mat of Crust (B4)	___	Recent Iron reduction in tilled Soils (C6)
___	Iron Deposits (B5)	___	Thin Muck Surface (C7)
___	Inundation Visible on Aerial Imagery (B7)	___	Other (Explain in Remarks)
___	Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators: (minimum of two required)

___	Surface Soil Cracks (B6)	___	Stunted or Stressed Plants (D1)
___	Drainage Patterns (B10)	___	Geomorphic Position (D2)
___	Moss Trim Lines (B16)	___	Shallow Aquitard (D3)
___	Dry-Season Water Table (C2)	___	Microtopographic Relief (D4)
___	Crayfish Burrows (C8)	___	FAC-Neutral Test (D5)
___	Saturation Visible on Aerial Imagery (C9)		

Field Observations:

Surface Water Present?	Yes ___	No x	Depth ___						
Water Table Present?	Yes ___	No x	Depth ___	**Wetland Hydrology Present?**	**Yes** ___	**No** x			
Saturation Present?	Yes ___	No x	Depth ___						

Comments:

Soil Profile

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth(cm)	Matrix		Redox Features				Texture	Remarks
	Color(moist)	%	Color(moist)	%	Type[1]	Loc[2]		
0 - 2cm							Organic	
2 - 30cm	5YR 3/3			none			Clay sand	With gravel; fill

[1]Type:C=Concentration,D=Depletion,RM=Reduced Matrix,CS=Covered or Coated Sand Grains.2Location:PL=Pore Lining,M=Matrix

Hydric Soil Indicators:

___	Histosol (A1)	___	Sandy Redox (S5)
___	Histic Epipedon (A2)	___	Stripped Matrix (S6)
___	Black Histic (A3)	___	Dark Surfaces (S7)
___	Hydrogen Sulfide (A4)	___	Polyvalue Below Surface (S8)
___	Stratified Layers (A5)	___	Thin Dark Surface (S9)
___	Depleted Below Dark Surface (A11)	___	Loamy Gleyed Matrix (F2)
___	Thick Dark Surface (A12)	___	Depleted Matrix (F3)
___	Sandy Mucky Mineral (S1)	___	Redox Dark Surface (F6)
___	5cm Mucky Peat or Peat (S3)	___	Depleted Dark Surface (F7)
___	Sandy Gleyed Matrix (S4)	___	Redox Depressions (F8)

Restrictive Layer Type (if observed | Depth: | **Hydric Soil Present?** | **Yes** ___ | **No** x

Comments:

Infilled

Project Site:	Beaubassin		Date:	15-Jun-16	Sample Point:	2	Job #:
Client/owner:	Pierre Vautour		Field Investigator(s):	Theo Popma			
County:	Westmorland		Coordinates:	46.2341 x 64.4938			
PID	861443		Do normal environmental conditions exist on-site?		Yes		No x
If no, explain:							
Atypical Situation?	Yes x	No	Explain:	Presence of Seawall affecting hydrology and soils indicators			
Is this a potential **Problem Area?**		Yes	No x	Explain:			

Wetland Determination
(Check One Only For Each Criteria)

Dominant Hydrophytic Vegetation (50/20 rule)	Yes	x	No	
Wetland Hydrology	Yes	x	No	
Hydric Soils	Yes	x	No	

Wetland Determination
x **YES** **NO**

Wetland Type: Saltmarsh

Rational for Determination: Graminoid-dominated Coastal Wetland

Vegetation

	Tree Stratum: (Plot size: 9m2)	%Cover		Dominant Species	Indicator Status
1	*none*				
2					
3					
4					
5					
6					
		0	=	**Total Cover**	

	Shrub Stratum: (Plot size: 5m2)				
1	*Spiraea alba*				*fac*
2	*Sambucus racemosa*				*facu*
3					*#N/A*
4					*#N/A*
5					
		0	=	**Total Cover**	

	Herb Stratum: (Plot Size: 1m2)				
1	*Spartina alterniflora*				*obl*
2	*Calamagrostis canadensis*				*facw*
3	*Rubus idaeus*				*fac*
4	*Solanum dulcamara*				*fac*
5	*Galeopsis tetrahit*				*fac*
		0	=	**Total Cover**	

Comments

Dominance Test Worksheet:

# of Dominant Species that are OBL,FACW,FAC:	6
Total # of Dominant Species across all strata:	7
% of Dominant Species that are OBL,FACW,FAC:	85.7

Prevalence Index Worksheet:

	Total %Cover of:	Multiply by:	
OBL Species		x 1 =	0
FACW Species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
ULP Species		x 5 =	0
Column Totals:	0		0

Prevalence Index = B/A = ##

Hydrophytic Vegetation Indicators:

x	Rapid Test for Hydrolic Vegetation
x	Dominance Test is >50%
	Prevalence Index is ≤3.0 [1]
	Morphological Adaptations[1] (explain)
	Problematic Hydrophytic Vegetation[1](explain)

[1]Indicators of hydric soil and weland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** x **No**

Hydrology

Primary Hydrological Indicators: (minimum of one is required;check all that apply) 2

___	Surface Water (A1)	x	Water Stained Leaves (B9)
___	High Water Table (A2)	___	Aquatic Fauna (B13)
___	Saturation (A3)	___	Marl Deposits (B15)
___	Watermarks	___	Hydrogen Sulfide Odor (C1)
___	Sediment Deposits (B2)	___	Oxidized Rhizospheres on Living Roots (C3)
___	Drift Deposits (B3)	___	Presence of Reduced Iron (C4)
___	Algal Mat of Crust (B4)	___	Recent Iron reduction in tilled Soils (C6)
___	Iron Deposits (B5)	___	Thin Muck Surface (C7)
___	Inundation Visible on Aerial Imagery (B7)	___	Other (Explain in Remarks)
___	Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators: (minimum of two required)

___	Surface Soil Cracks (B6)	___	Stunted or Stressed Plants (D1)
___	Drainage Patterns (B10)	___	Geomorphic Position (D2)
___	Moss Trim Lines (B16)	___	Shallow Aquitard (D3)
___	Dry-Season Water Table (C2)	___	Microtopographic Relief (D4)
___	Crayfish Burrows (C8)	___	FAC-Neutral Test (D5)
___	Saturation Visible on Aerial Imagery (C9)		

Field Observations:

Surface Water Present?	Yes	___	No	x	Depth	___				
Water Table Present?	Yes	___	No	x	Depth	___	**Wetland Hydrology Present?**	**Yes**	x	**No** ___
Saturation Present?	Yes	x	No	___	Depth	0cm				

Comments:

Raised hump of "dune" at toe of croshed rock slope

Soil Profile

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth(cm)	Matrix		Redox Features					
	Color(moist)	%	Color(moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12cm							organic	
13 - 30							sand	Alluvial deposit

[1]Type:C=Concentration,D=Depletion,RM=Reduced Matrix,CS=Covered or Coated Sand Grains.2Location:PL=Pore Lining,M=Matrix

Hydric Soil Indicators:

___	Histosol (A1)	___	Sandy Redox (S5)
___	Histic Epipedon (A2)	___	Stripped Matrix (S6)
___	Black Histic (A3)	___	Dark Surfaces (S7)
___	Hydrogen Sulfide (A4)	___	Polyvalue Below Surface (S8)
___	Stratified Layers (A5)	___	Thin Dark Surface (S9)
___	Depleted Below Dark Surface (A11)	___	Loamy Gleyed Matrix (F2)
___	Thick Dark Surface (A12)	___	Depleted Matrix (F3)
___	Sandy Mucky Mineral (S1)	___	Redox Dark Surface (F6)
___	5cm Mucky Peat or Peat (S3)	___	Depleted Dark Surface (F7)
___	Sandy Gleyed Matrix (S4)	___	Redox Depressions (F8)

Restrictive Layer Type (if observed Depth: **Hydric Soil Present?** **Yes** x **No** ___

Comments:

This is a small dune with very little mineral component to the soil.

Project Site:	Beaubassin	Date:	15-Jun-16	Sample Point: 3	Job #:
Client/owner:	Pierre Vautour	Field Investigator(s):	Theo Popma		
County:	Westmorland	Coordinates:	46.2335 x 64.4937		
PID 861443		Do normal environmental conditions exist on-site?	Yes [ ]	No [x]	

If no, explain: Heavy rain

Atypical Situation? Yes [ ] No [x] Explain:

Is this a potential **Problem Area?** Yes [ ] No [x] Explain:

Wetland Determination

(Check One Only For Each Criteria)

Dominant Hydrophytic Vegetation (50/20 rule)	Yes	[x]	No	[ ]
Wetland Hydrology	Yes	[x]	No	[ ]
Hydric Soils	Yes	[x]	No	[ ]

Wetland Type: Saltmarsh

Rational for Determination: Graminoid-dominated coastal wetland

Wetland Determination

[x] **YES** [ ] **NO**

Vegetation

	Tree Stratum: (Plot size: 9m2)	%Cover		Dominant Species	Indicator Status
1					
2					
3					
4					
5					
6					
		0	=	**Total Cover**	
	Shrub Stratum: (Plot size: 5m2)				
1	*Spiraea alba*				*fac*
2	*Rosa virginiana*				*fac*
3					
4					
5					
		0	=	**Total Cover**	
	Herb Stratum: (Plot Size: 1m2)				
1	*Spartina pectinata*				*facw+*
2	*Schoenoplectus maritimus*				*obl*
3	*Impatiens capensis*				*fac*
4					
5					
		0	=	**Total Cover**	

Comments

Dominance Test Worksheet:

# of Dominant Species that are OBL,FACW,FAC:	5
Total # of Dominant Species across all strata:	5
% of Dominant Species that are OBL,FACW,FAC:	100

Prevalence Index Worksheet:

	Total %Cover of:	Multiply by:	
OBL Species		x 1 =	0
FACW Species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
ULP Species		x 5 =	0
Column Totals:	0		0

Prevalence Index = B/A = ##

Hydrophytic Vegetation Indicators:

- [x] Rapid Test for Hydrolic Vegetation
- [x] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0 [1]
- [ ] Morphological Adaptations[1] (explain)
- [ ] Problematic Hydrophytic Vegetation[1](explain)

[1]Indicators of hydric soil and weland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** x **No**

Hydrology

Primary Hydrological Indicators: (minimum of one is required;check all that apply) 3

x	Surface Water (A1)	x	Water Stained Leaves (B9)
x	High Water Table (A2)		Aquatic Fauna (B13)
x	Saturation (A3)		Marl Deposits (B15)
x	Watermarks	x	Hydrogen Sulfide Odor (C1)
x	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)
	Drift Deposits (B3)		Presence of Reduced Iron (C4)
	Algal Mat of Crust (B4)		Recent Iron reduction in tilled Soils (C6)
	Iron Deposits (B5)		Thin Muck Surface (C7)
	Inundation Visible on Aerial Imagery (B7)		Other (Explain in Remarks)
	Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators: (minimum of two required)

	Surface Soil Cracks (B6)		Stunted or Stressed Plants (D1)
	Drainage Patterns (B10)		Geomorphic Position (D2)
	Moss Trim Lines (B16)		Shallow Aquitard (D3)
	Dry-Season Water Table (C2)		Microtopographic Relief (D4)
	Crayfish Burrows (C8)		FAC-Neutral Test (D5)
	Saturation Visible on Aerial Imagery (C9)		

Field Observations:

Surface Water Present?	Yes	x	No		Depth						
Water Table Present?	Yes	x	No		Depth	0	**Wetland Hydrology Present?**	**Yes**	x	**No**	
Saturation Present?	Yes	x	No		Depth	0					

Comments:

Soil Profile

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth(cm)	Matrix		Redox Features					
	Color(moist)	%	Color(moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type:C=Concentration,D=Depletion,RM=Reduced Matrix,CS=Covered or Coated Sand Grains.2Location:PL=Pore Lining,M=Matrix

Hydric Soil Indicators:

	Histosol (A1)		Sandy Redox (S5)
	Histic Epipedon (A2)		Stripped Matrix (S6)
	Black Histic (A3)		Dark Surfaces (S7)
x	Hydrogen Sulfide (A4)		Polyvalue Below Surface (S8)
	Stratified Layers (A5)		Thin Dark Surface (S9)
	Depleted Below Dark Surface (A11)		Loamy Gleyed Matrix (F2)
	Thick Dark Surface (A12)		Depleted Matrix (F3)
	Sandy Mucky Mineral (S1)		Redox Dark Surface (F6)
	5cm Mucky Peat or Peat (S3)		Depleted Dark Surface (F7)
	Sandy Gleyed Matrix (S4)		Redox Depressions (F8)

Restrictive Layer Type (if observed		Depth:	**Hydric Soil Present?**	**Yes**	x	**No**	

Comments:

Project Site:	Beaubassin		Date:	15-Jun-16	Sample Point:	4	Job #:
Client/owner:	Pierre Vautour		Field Investigator(s):	Theo Popma			
County:	Westmorland		Coordinates:	46.2334 x 64.4938			
PID	861443		Do normal environmental conditions exist on-site?		Yes		No x

If no, explain: Heavy Rain

Atypical Situation? Yes x No Explain: Seawall affecting hydrology and soils

Is this a potential **Problem Area?** Yes No x Explain:

Wetland Determination

(Check One Only For Each Criteria)

Dominant Hydrophytic Vegetation (50/20 rule)	Yes x	No
Wetland Hydrology	Yes	No x
Hydric Soils	Yes	No x

Wetland Type:

Rational for Determination:

Wetland Determination

YES | x | NO

Vegetation

	Tree Stratum: (Plot size: 9m2)	%Cover		Dominant Species	Indicator Status
1					
2					
3					
4					
5					
6					
		0	=	**Total Cover**	
	Shrub Stratum: (Plot size: 5m2)				
1	*Morella pensylvanica*	20		x	*fac*
2	*Spiraea alba*	25		x	*fac*
3	*Rosa virginiana*	20		x	*fac*
4	*Betula populifolia*	10			*fac*
5	*Prunus virginiana*	10			*fac*
		85	=	**Total Cover**	
	Herb Stratum: (Plot Size: 1m2)				
1	*Calystegia sepium*			5	*facw*
2	*Sonchus arvensis*			5	*fac*
3					
4					
5					
		0	=	**Total Cover**	

Comments

Dominance Test Worksheet:

# of Dominant Species that are OBL,FACW,FAC:	5
Total # of Dominant Species across all strata:	5
% of Dominant Species that are OBL,FACW,FAC:	100

Prevalence Index Worksheet:

	Total %Cover of:	Multiply by:	
OBL Species		x 1 =	0
FACW Species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
ULP Species		x 5 =	0
Column Totals:	0		0

Prevalence Index = B/A = ##

Hydrophytic Vegetation Indicators:

- x Rapid Test for Hydrolic Vegetation
- x Dominance Test is >50%
- Prevalence Index is ≤3.0 [1]
- Morphological Adaptations[1] (explain)
- Problematic Hydrophytic Vegetation[1](explain)

[1]Indicators of hydric soil and weland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** x **No**

Hydrology

Primary Hydrological Indicators: (minimum of one is required;check all that apply) 4

___	Surface Water (A1)	___	Water Stained Leaves (B9)
___	High Water Table (A2)	___	Aquatic Fauna (B13)
___	Saturation (A3)	___	Marl Deposits (B15)
___	Watermarks	___	Hydrogen Sulfide Odor (C1)
___	Sediment Deposits (B2)	___	Oxidized Rhizospheres on Living Roots (C3)
___	Drift Deposits (B3)	___	Presence of Reduced Iron (C4)
___	Algal Mat of Crust (B4)	___	Recent Iron reduction in tilled Soils (C6)
___	Iron Deposits (B5)	___	Thin Muck Surface (C7)
___	Inundation Visible on Aerial Imagery (B7)	___	Other (Explain in Remarks)
___	Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators: (minimum of two required)

___	Surface Soil Cracks (B6)	___	Stunted or Stressed Plants (D1)
___	Drainage Patterns (B10)	___	Geomorphic Position (D2)
___	Moss Trim Lines (B16)	___	Shallow Aquitard (D3)
___	Dry-Season Water Table (C2)	___	Microtopographic Relief (D4)
___	Crayfish Burrows (C8)	___	FAC-Neutral Test (D5)
___	Saturation Visible on Aerial Imagery (C9)		

Field Observations:

Surface Water Present?	Yes ___	No x	Depth ___						
Water Table Present?	Yes ___	No x	Depth ___	**Wetland Hydrology Present?**	**Yes** ___	**No** x			
Saturation Present?	Yes ___	No x	Depth ___						

Comments:

Soil Profile

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth(cm)	Matrix		Redox Features				
	Color(moist)	%	Color(moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10cm							Organic	
11 - 30cm	7.5YR 3./3						Sandy	

[1]Type:C=Concentration,D=Depletion,RM=Reduced Matrix,CS=Covered or Coated Sand Grains.2Location:PL=Pore Lining,M=Matrix

Hydric Soil Indicators:

___	Histosol (A1)	___	Sandy Redox (S5)
___	Histic Epipedon (A2)	___	Stripped Matrix (S6)
___	Black Histic (A3)	___	Dark Surfaces (S7)
___	Hydrogen Sulfide (A4)	___	Polyvalue Below Surface (S8)
___	Stratified Layers (A5)	___	Thin Dark Surface (S9)
___	Depleted Below Dark Surface (A11)	___	Loamy Gleyed Matrix (F2)
___	Thick Dark Surface (A12)	___	Depleted Matrix (F3)
___	Sandy Mucky Mineral (S1)	___	Redox Dark Surface (F6)
___	5cm Mucky Peat or Peat (S3)	___	Depleted Dark Surface (F7)
___	Sandy Gleyed Matrix (S4)	___	Redox Depressions (F8)

Restrictive Layer Type (if observed): Depth: **Hydric Soil Present?** **Yes** ___ **No** x

Comments:

no depletion

Project Site:	Beaubassin			Date:	15-Jun-16	Sample Point:	5	Job #:	
Client/owner:	Pierre Vautour			Field Investigator(s):	Theo Popma				
County:	Westmorland			Coordinates:	46.2333 x 64.4942				
PID	861443			Do normal environmental conditions exist on-site?		Yes		No	x
If no, explain:	Rain for last week								
Atypical Situation?	Yes x	No		Explain:	Seawall affecting drainage and sedimentation				
Is this a potential **Problem Area?**		Yes		No x	Explain:				

Wetland Determination

(Check One Only For Each Criteria)

Dominant Hydrophytic Vegetation (50/20 rule)	Yes	x	No	
Wetland Hydrology	Yes	x	No	
Hydric Soils	Yes	x	No	

Wetland Determination

x **YES** **NO**

Wetland Type: Shrub Swamp

Rational for Determination: Despite being coastal and brackish, this is shrub-dominated habitat

Vegetation

	Tree Stratum: (Plot size: 9m2)	%Cover		Dominant Species	Indicator Status
1					
2					
3					
4					
5					
6					
		0	=	**Total Cover**	
	Shrub Stratum: (Plot size: 5m2)				
1	*Spiraea alba*	20		x	*fac*
2	*Rosa virginiana*	10		x	*fac*
3	*Betula populifolia*	2		x	*fac*
4					*#N/A*
5					
		32	=	**Total Cover**	
	Herb Stratum: (Plot Size: 1m2)				
1	*Iris versicolor*	20		x	*facw+*
2	*Sonchus arvensis*	5		x	*fac*
3	*Thalictrum pubescens*	5		x	*facw*
4	*Symphyotrichum novi-belgii*	5		x	*fac*
5	*Atriplex sp.*	2		x	*facw*
		37	=	**Total Cover**	

Comments

Dominance Test Worksheet:

# of Dominant Species that are OBL,FACW,FAC:	8
Total # of Dominant Species across all strata:	8
% of Dominant Species that are OBL,FACW,FAC:	100

Prevalence Index Worksheet:

	Total %Cover of:	Multiply by:	
OBL Species		x 1 =	0
FACW Species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
ULP Species		x 5 =	0
Column Totals:	0		0

Prevalence Index = B/A = ##

Hydrophytic Vegetation Indicators:

x	Rapid Test for Hydrolic Vegetation
x	Dominance Test is >50%
	Prevalence Index is ≤3.0 [1]
	Morphological Adaptations[1] (explain)
	Problematic Hydrophytic Vegetation[1](explain)

[1]Indicators of hydric soil and weland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** x **No**

Hydrology

Primary Hydrological Indicators: (minimum of one is required;check all that apply) 5

	Surface Water (A1)	x	Water Stained Leaves (B9)
	High Water Table (A2)		Aquatic Fauna (B13)
x	Saturation (A3)		Marl Deposits (B15)
x	Watermarks		Hydrogen Sulfide Odor (C1)
x	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)
	Drift Deposits (B3)		Presence of Reduced Iron (C4)
	Algal Mat of Crust (B4)		Recent Iron reduction in tilled Soils (C6)
	Iron Deposits (B5)		Thin Muck Surface (C7)
	Inundation Visible on Aerial Imagery (B7)		Other (Explain in Remarks)
	Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators: (minimum of two required)

	Surface Soil Cracks (B6)		Stunted or Stressed Plants (D1)
	Drainage Patterns (B10)		Geomorphic Position (D2)
	Moss Trim Lines (B16)		Shallow Aquitard (D3)
	Dry-Season Water Table (C2)		Microtopographic Relief (D4)
	Crayfish Burrows (C8)		FAC-Neutral Test (D5)
	Saturation Visible on Aerial Imagery (C9)		

Field Observations:

Surface Water Present?	Yes		No	x	Depth			
Water Table Present?	Yes	x	No		Depth	30	**Wetland Hydrology Present?**	**Yes** x **No**
Saturation Present?	Yes	x	No		Depth	0		

Comments:

Soil Profile

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth(cm)	Matrix		Redox Features					
	Color(moist)	%	Color(moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8cm							Organic	
9 - 25cm	5YR 5/2						Sandy clay	
29 - 30cm	7.5YR 4/3						Sandy clay	

[1]Type:C=Concentration,D=Depletion,RM=Reduced Matrix,CS=Covered or Coated Sand Grains.2Location:PL=Pore Lining,M=Matrix

Hydric Soil Indicators:

	Histosol (A1)		Sandy Redox (S5)
	Histic Epipedon (A2)		Stripped Matrix (S6)
	Black Histic (A3)		Dark Surfaces (S7)
	Hydrogen Sulfide (A4)		Polyvalue Below Surface (S8)
	Stratified Layers (A5)		Thin Dark Surface (S9)
	Depleted Below Dark Surface (A11)		Loamy Gleyed Matrix (F2)
	Thick Dark Surface (A12)	x	Depleted Matrix (F3)
	Sandy Mucky Mineral (S1)		Redox Dark Surface (F6)
	5cm Mucky Peat or Peat (S3)		Depleted Dark Surface (F7)
	Sandy Gleyed Matrix (S4)		Redox Depressions (F8)

Restrictive Layer Type (if observed Depth: **Hydric Soil Present?** **Yes** x **No**

Comments:

Project Site:	Beaubassin		Date:	15-Jun-16	Sample Point:	6	Job #:
Client/owner:	Pierre Vautour		Field Investigator(s):	Theo Popma			
County:	Westmorland		Coordinates:	46.2302 x 64.4944			
PID	861443		Do normal environmental conditions exist on-site?		Yes		No x
If no, explain:	Rain for last week						

Atypical Situation? Yes ☐ No ☐ Explain:

Is this a potential **Problem Area?** Yes ☐ No ☐ Explain:

Wetland Determination

(Check One Only For Each Criteria)

Dominant Hydrophytic Vegetation (50/20 rule)	Yes ☐	No x
Wetland Hydrology	Yes ☐	No x
Hydric Soils	Yes ☐	No x

Wetland Type:

Rational for Determination:

Wetland Determination

☐ **YES** x **NO**

Vegetation

	Tree Stratum: (Plot size: 9m2)	%Cover		Dominant Species	Indicator Status
1	*prunus virginiana*				
2					
3					
4					
5					
6					
		0	=	**Total Cover**	
	Shrub Stratum: (Plot size: 5m2)				
1	*Spiraea alba*	5			*fac*
2	*Betula populifolia*	25		x	*fac*
3	*Picea rubens*	30		x	*fac*
4					
5					
		60	=	**Total Cover**	
	Herb Stratum: (Plot Size: 1m2)				
1	*Poa pratensis*	20		x	*facu*
2	*Festuca filiformis*	20		x	*facu*
3	*Trifolium pratense*	5		x	*facu*
4	*Valeriana officinalis*	5		x	*fac*
5	*Impatiens capensis*	2			*fac*
		52	=	**Total Cover**	

Comments

Dominance Test Worksheet:

# of Dominant Species that are OBL,FACW,FAC:	3
Total # of Dominant Species across all strata:	6
% of Dominant Species that are OBL,FACW,FAC:	50

Prevalence Index Worksheet:

	Total %Cover of:	Multiply by:	
OBL Species		x 1 =	0
FACW Species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
ULP Species		x 5 =	0
Column Totals:	0		0

Prevalence Index = B/A = ##

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrolic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0 [1]
- ☐ Morphological Adaptations[1] (explain)
- ☐ Problematic Hydrophytic Vegetation[1](explain)

[1]Indicators of hydric soil and weland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** x

Hydrology

Primary Hydrological Indicators: (minimum of one is required;check all that apply) 6

___	Surface Water (A1)	___	Water Stained Leaves (B9)
___	High Water Table (A2)	___	Aquatic Fauna (B13)
___	Saturation (A3)	___	Marl Deposits (B15)
___	Watermarks	___	Hydrogen Sulfide Odor (C1)
___	Sediment Deposits (B2)	___	Oxidized Rhizospheres on Living Roots (C3)
___	Drift Deposits (B3)	___	Presence of Reduced Iron (C4)
___	Algal Mat of Crust (B4)	___	Recent Iron reduction in tilled Soils (C6)
___	Iron Deposits (B5)	___	Thin Muck Surface (C7)
___	Inundation Visible on Aerial Imagery (B7)	___	Other (Explain in Remarks)
___	Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators: (minimum of two required)

___	Surface Soil Cracks (B6)	___	Stunted or Stressed Plants (D1)
___	Drainage Patterns (B10)	___	Geomorphic Position (D2)
___	Moss Trim Lines (B16)	___	Shallow Aquitard (D3)
___	Dry-Season Water Table (C2)	___	Microtopographic Relief (D4)
___	Crayfish Burrows (C8)	___	FAC-Neutral Test (D5)
___	Saturation Visible on Aerial Imagery (C9)		

Field Observations:

Surface Water Present?	Yes ___	No x	Depth						
Water Table Present?	Yes x	No ___	Depth	30	**Wetland Hydrology Present?**	**Yes** ___	**No** x		
Saturation Present?	Yes ___	No x	Depth						

Comments:

Soil Profile

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth(cm)	Matrix		Redox Features					
	Color(moist)	%	Color(moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6cm							Organic	
7 - 15cm	7.5YR 2.5/3						Sandy clay	
16 - 18cm	7.5YR 5/2						Sandy clay	

[1]Type:C=Concentration,D=Depletion,RM=Reduced Matrix,CS=Covered or Coated Sand Grains.2Location:PL=Pore Lining,M=Matrix

Hydric Soil Indicators:

___	Histosol (A1)	___	Sandy Redox (S5)
___	Histic Epipedon (A2)	___	Stripped Matrix (S6)
___	Black Histic (A3)	___	Dark Surfaces (S7)
___	Hydrogen Sulfide (A4)	___	Polyvalue Below Surface (S8)
___	Stratified Layers (A5)	___	Thin Dark Surface (S9)
___	Depleted Below Dark Surface (A11)	___	Loamy Gleyed Matrix (F2)
___	Thick Dark Surface (A12)	___	Depleted Matrix (F3)
___	Sandy Mucky Mineral (S1)	___	Redox Dark Surface (F6)
___	5cm Mucky Peat or Peat (S3)	___	Depleted Dark Surface (F7)
___	Sandy Gleyed Matrix (S4)	___	Redox Depressions (F8)

Restrictive Layer Type (if observed | Depth: | **Hydric Soil Present?** | **Yes** ___ | **No** x

Comments:

insufficient thickness of depleted layer

Project Site:	Beaubassin			Date:	15-Jun-16		Sample Point:	7	Job #:
Client/owner:	Pierre Vautour			Field Investigator(s):	Theo Popma				
County:	Westmorland			Coordinates:	46.2298 x 64.4944				
PID	861443			Do normal environmental conditions exist on-site?		Yes		No	x
If no, explain:	Rain for last week								
Atypical Situation?	Yes x	No	Explain:	Runoff from nearby agricultural field affecting drainage					
Is this a potential **Problem Area?**		Yes	No x	Explain:					

Wetland Determination
(Check One Only For Each Criteria)

Dominant Hydrophytic Vegetation (50/20 rule)	Yes x	No
Wetland Hydrology	Yes	No x
Hydric Soils	Yes	No x
Wetland Type:		
Rational for Determination:		

Wetland Determination

YES | x | **NO**

Vegetation

	Tree Stratum: (Plot size: 9m2)	%Cover		Dominant Species	Indicator Status
1					
2					
3					
4					
5					
6					
		0	=	**Total Cover**	
	Shrub Stratum: (Plot size: 5m2)				
1					
2					
3					
4					
5					
		0	=	**Total Cover**	
	Herb Stratum: (Plot Size: 1m2)				
1	*Carex crinita*	20		x	*obl*
2	*Poa palustris*	5		x	*fac*
3	*Calamagrostis canadensis*	20		x	*facw*
4	*Potentilla simplex*	2		x	*upl*
5	*Calystegia sepium*	2		x	*facw*
		49	=	**Total Cover**	

Comments

Dominance Test Worksheet:

# of Dominant Species that are OBL,FACW,FAC:	4
Total # of Dominant Species across all strata:	5
% of Dominant Species that are OBL,FACW,FAC:	80

Prevalence Index Worksheet:

	Total %Cover of:	Multiply by:	
OBL Species		x 1 =	0
FACW Species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
ULP Species		x 5 =	0
Column Totals:	0		0

Prevalence Index = B/A = ##

Hydrophytic Vegetation Indicators:

- x Rapid Test for Hydrolic Vegetation
- x Dominance Test is >50%
- ___ Prevalence Index is ≤3.0 [1]
- ___ Morphological Adaptations[1] (explain)
- ___ Problematic Hydrophytic Vegetation[1](explain)

[1]Indicators of hydric soil and weland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** x **No**

Hydrology

Primary Hydrological Indicators: (minimum of one is required;check all that apply) 7

___	Surface Water (A1)	___	Water Stained Leaves (B9)
___	High Water Table (A2)	___	Aquatic Fauna (B13)
___	Saturation (A3)	___	Marl Deposits (B15)
___	Watermarks	___	Hydrogen Sulfide Odor (C1)
___	Sediment Deposits (B2)	___	Oxidized Rhizospheres on Living Roots (C3)
___	Drift Deposits (B3)	___	Presence of Reduced Iron (C4)
___	Algal Mat of Crust (B4)	___	Recent Iron reduction in tilled Soils (C6)
___	Iron Deposits (B5)	___	Thin Muck Surface (C7)
___	Inundation Visible on Aerial Imagery (B7)	___	Other (Explain in Remarks)
___	Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators: (minimum of two required)

___	Surface Soil Cracks (B6)	___	Stunted or Stressed Plants (D1)
___	Drainage Patterns (B10)	___	Geomorphic Position (D2)
___	Moss Trim Lines (B16)	___	Shallow Aquitard (D3)
___	Dry-Season Water Table (C2)	___	Microtopographic Relief (D4)
___	Crayfish Burrows (C8)	___	FAC-Neutral Test (D5)
___	Saturation Visible on Aerial Imagery (C9)		

Field Observations:

Surface Water Present?	Yes ___	No x	Depth ___						
Water Table Present?	Yes x	No x	Depth ___	**Wetland Hydrology Present?**	**Yes** ___	**No** x			
Saturation Present?	Yes ___	No x	Depth ___						

Comments:

Soil Profile

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth(cm)	Matrix		Redox Features					
	Color(moist)	%	Color(moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5cm							organic	
6 - 30cm	7YR 4/3						Sandy Fill	

[1]Type:C=Concentration,D=Depletion,RM=Reduced Matrix,CS=Covered or Coated Sand Grains.2Location:PL=Pore Lining,M=Matrix

Hydric Soil Indicators:

___	Histosol (A1)	___	Sandy Redox (S5)
___	Histic Epipedon (A2)	___	Stripped Matrix (S6)
___	Black Histic (A3)	___	Dark Surfaces (S7)
___	Hydrogen Sulfide (A4)	___	Polyvalue Below Surface (S8)
___	Stratified Layers (A5)	___	Thin Dark Surface (S9)
___	Depleted Below Dark Surface (A11)	___	Loamy Gleyed Matrix (F2)
___	Thick Dark Surface (A12)	___	Depleted Matrix (F3)
___	Sandy Mucky Mineral (S1)	___	Redox Dark Surface (F6)
___	5cm Mucky Peat or Peat (S3)	___	Depleted Dark Surface (F7)
___	Sandy Gleyed Matrix (S4)	___	Redox Depressions (F8)

Restrictive Layer Type (if observed Depth: **Hydric Soil Present?** **Yes** ___ **No** x

Comments:

Project Site:	Beaubassin			Date:	15-Jun-16	Sample Point:	8	Job #:	
Client/owner:	Pierre Vautour			Field Investigator(s):	Theo Popma				
County:	Westmorland			Coordinates:	46.2297 x 64.4946				
PID	861443			Do normal environmental conditions exist on-site?		Yes		No	x
If no, explain:	Rain for last week								
Atypical Situation?	Yes x	No	Explain:	Runoff from agricultural field affecting drainage and sediments					
Is this a potential **Problem Area?**	Yes x	No	Explain:	drainage channel from field dry this time of year					

Wetland Determination
(Check One Only For Each Criteria)

Dominant Hydrophytic Vegetation (50/20 rule)	Yes	x	No	
Wetland Hydrology	Yes	x	No	
Hydric Soils	Yes		No	x
Wetland Type:				
Rational for Determination:				

Wetland Determination

	YES	x	**NO**

Vegetation

	Tree Stratum: (Plot size: 9m2)	%Cover		Dominant Species	Indicator Status
1					
2					
3					
4					
5					
6					
		0	=	**Total Cover**	
	Shrub Stratum: (Plot size: 5m2)				
1	*Crataegus sp.*	5			*Fac*
2					
3					
4					
5					
		5	=	**Total Cover**	
	Herb Stratum: (Plot Size: 1m2)				
1	*Valeriana officinalis*	20		x	*fac*
2	*Arctium minus*	20		x	*fac*
3					
4					
5					
		40	=	**Total Cover**	

Comments

Dominance Test Worksheet:

# of Dominant Species that are OBL,FACW,FAC:	3
Total # of Dominant Species across all strata:	3
% of Dominant Species that are OBL,FACW,FAC:	100

Prevalence Index Worksheet:

Total %Cover of:	Multiply by:	
OBL Species	x 1 =	0
FACW Species	x 2 =	0
FAC Species	x 3 =	0
FACU Species	x 4 =	0
ULP Species	x 5 =	0
Column Totals: 0		0

Prevalence Index = B/A = ##

Hydrophytic Vegetation Indicators:

x	Rapid Test for Hydrolic Vegetation
x	Dominance Test is >50%
	Prevalence Index is ≤3.0 [1]
	Morphological Adaptations[1] (explain)
	Problematic Hydrophytic Vegetation[1](explain)

[1]Indicators of hydric soil and weland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** x **No**

Hydrology

Primary Hydrological Indicators: (minimum of one is required;check all that apply) 8

___	Surface Water (A1)	___	Water Stained Leaves (B9)
___	High Water Table (A2)	___	Aquatic Fauna (B13)
___	Saturation (A3)	___	Marl Deposits (B15)
___	Watermarks	___	Hydrogen Sulfide Odor (C1)
___	Sediment Deposits (B2)	___	Oxidized Rhizospheres on Living Roots (C3)
___	Drift Deposits (B3)	___	Presence of Reduced Iron (C4)
___	Algal Mat of Crust (B4)	___	Recent Iron reduction in tilled Soils (C6)
___	Iron Deposits (B5)	___	Thin Muck Surface (C7)
___	Inundation Visible on Aerial Imagery (B7)	___	Other (Explain in Remarks)
___	Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators: (minimum of two required)

___	Surface Soil Cracks (B6)	___	Stunted or Stressed Plants (D1)
x	Drainage Patterns (B10)	___	Geomorphic Position (D2)
___	Moss Trim Lines (B16)	___	Shallow Aquitard (D3)
___	Dry-Season Water Table (C2)	x	Microtopographic Relief (D4)
___	Crayfish Burrows (C8)	___	FAC-Neutral Test (D5)
___	Saturation Visible on Aerial Imagery (C9)		

Field Observations:

Surface Water Present?	Yes ___	No	x	Depth	___				
Water Table Present?	Yes ___	No	x	Depth	___	**Wetland Hydrology Present?**	**Yes**	x	**No** ___
Saturation Present?	Yes ___	No	x	Depth	___				

Comments:

dry this time of year.

Soil Profile

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth(cm)	Matrix		Redox Features				
	Color(moist)	%	Color(moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2cm							organic	
3 - 30cm	7.5YR 3.3						Sandy clay	

[1]Type:C=Concentration,D=Depletion,RM=Reduced Matrix,CS=Covered or Coated Sand Grains.2Location:PL=Pore Lining,M=Matrix

Hydric Soil Indicators:

___	Histosol (A1)	___	Sandy Redox (S5)
___	Histic Epipedon (A2)	___	Stripped Matrix (S6)
___	Black Histic (A3)	___	Dark Surfaces (S7)
___	Hydrogen Sulfide (A4)	___	Polyvalue Below Surface (S8)
___	Stratified Layers (A5)	___	Thin Dark Surface (S9)
___	Depleted Below Dark Surface (A11)	___	Loamy Gleyed Matrix (F2)
___	Thick Dark Surface (A12)	___	Depleted Matrix (F3)
___	Sandy Mucky Mineral (S1)	___	Redox Dark Surface (F6)
___	5cm Mucky Peat or Peat (S3)	___	Depleted Dark Surface (F7)
___	Sandy Gleyed Matrix (S4)	___	Redox Depressions (F8)

Restrictive Layer Type (if observed Depth: **Hydric Soil Present?** **Yes** ___ **No** x

Comments:

no depletion. Fill/runoff sediment from field

Project Site:	Beaubassin			Date:	15-Jun-16		Sample Point:	9	Job #:
Client/owner:	Pierre Vautour			Field Investigator(s):	Theo Popma				
County:	Westmorland			Coordinates:	46.2296 x 64.4942				
PID	861443			Do normal environmental conditions exist on-site?		Yes		No	x
If no, explain:	Rain for last week								
Atypical Situation?	Yes x	No	Explain:	Runoff from field affecting drainage and sediments					
Is this a potential **Problem Area?**	Yes	No x	Explain:						

Wetland Determination

(Check One Only For Each Criteria)

Dominant Hydrophytic Vegetation (50/20 rule)	Yes x	No
Wetland Hydrology	Yes	No x
Hydric Soils	Yes	No x
Wetland Type:		
Rational for Determination:		

Wetland Determination

YES | x | NO

Vegetation

	Tree Stratum: (Plot size: 9m2)	%Cover		Dominant Species	Indicator Status
1					
2					
3					
4					
5					
6					
		0	=	**Total Cover**	
	Shrub Stratum: (Plot size: 5m2)				
1	*Alnus incana*	25		x	*facw*
2					
3					
4					
5					
		25	=	**Total Cover**	
	Herb Stratum: (Plot Size: 1m2)				
1	*Calamagrostis canadensis*	20		x	*facw*
2	*Carex crinita*	10		x	*obl*
3					
4					
5					
		30	=	**Total Cover**	

Comments

Dominance Test Worksheet:

# of Dominant Species that are OBL,FACW,FAC:	3
Total # of Dominant Species across all strata:	3
% of Dominant Species that are OBL,FACW,FAC:	100

Prevalence Index Worksheet:

	Total %Cover of:	Multiply by:	
OBL Species		x 1 =	0
FACW Species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
ULP Species		x 5 =	0
Column Totals:	0		0

Prevalence Index = B/A = ##

Hydrophytic Vegetation Indicators:

- x Rapid Test for Hydrolic Vegetation
- x Dominance Test is >50%
- Prevalence Index is ≤3.0 [1]
- Morphological Adaptations[1] (explain)
- Problematic Hydrophytic Vegetation[1](explain)

[1]Indicators of hydric soil and weland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** x **No**

Hydrology

Primary Hydrological Indicators: (minimum of one is required;check all that apply) 9

___	Surface Water (A1)	___	Water Stained Leaves (B9)
___	High Water Table (A2)	___	Aquatic Fauna (B13)
___	Saturation (A3)	___	Marl Deposits (B15)
___	Watermarks	___	Hydrogen Sulfide Odor (C1)
___	Sediment Deposits (B2)	___	Oxidized Rhizospheres on Living Roots (C3)
___	Drift Deposits (B3)	___	Presence of Reduced Iron (C4)
___	Algal Mat of Crust (B4)	___	Recent Iron reduction in tilled Soils (C6)
___	Iron Deposits (B5)	___	Thin Muck Surface (C7)
___	Inundation Visible on Aerial Imagery (B7)	___	Other (Explain in Remarks)
___	Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators: (minimum of two required)

___	Surface Soil Cracks (B6)	___	Stunted or Stressed Plants (D1)
___	Drainage Patterns (B10)	___	Geomorphic Position (D2)
___	Moss Trim Lines (B16)	___	Shallow Aquitard (D3)
___	Dry-Season Water Table (C2)	___	Microtopographic Relief (D4)
___	Crayfish Burrows (C8)	___	FAC-Neutral Test (D5)
___	Saturation Visible on Aerial Imagery (C9)		

Field Observations:

Surface Water Present?	Yes	___	No	x	Depth	___			
Water Table Present?	Yes	___	No	x	Depth	___	**Wetland Hydrology Present?**	**Yes** ___	**No** x
Saturation Present?	Yes	___	No	x	Depth	___			

Comments:

Soil Profile

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth(cm)	Matrix		Redox Features				
	Color(moist)	%	Color(moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type:C=Concentration,D=Depletion,RM=Reduced Matrix,CS=Covered or Coated Sand Grains.2Location:PL=Pore Lining,M=Matrix

Hydric Soil Indicators:

___	Histosol (A1)	___	Sandy Redox (S5)
___	Histic Epipedon (A2)	___	Stripped Matrix (S6)
___	Black Histic (A3)	___	Dark Surfaces (S7)
___	Hydrogen Sulfide (A4)	___	Polyvalue Below Surface (S8)
___	Stratified Layers (A5)	___	Thin Dark Surface (S9)
___	Depleted Below Dark Surface (A11)	___	Loamy Gleyed Matrix (F2)
___	Thick Dark Surface (A12)	___	Depleted Matrix (F3)
___	Sandy Mucky Mineral (S1)	___	Redox Dark Surface (F6)
___	5cm Mucky Peat or Peat (S3)	___	Depleted Dark Surface (F7)
___	Sandy Gleyed Matrix (S4)	___	Redox Depressions (F8)

Restrictive Layer Type (if observed		Depth:	**Hydric Soil Present?**	**Yes** ___	**No** x

Comments:

no depletion

Project Site:	Beaubassin		Date:	15-Jun-16	Sample Point:	10	Job #:
Client/owner:	Pierre Vautour		Field Investigator(s):	Theo Popma			
County:	Westmorland		Coordinates:	46.2291 x 64.4931			
PID	861443		Do normal environmental conditions exist on-site?		Yes		No x
If no, explain:	Rain for last week						

Atypical Situation? Yes [ ] No [x] Explain:

Is this a potential **Problem Area?** Yes [ ] No [x] Explain:

Wetland Determination

(Check One Only For Each Criteria)

Dominant Hydrophytic Vegetation (50/20 rule)	Yes	x	No	
Wetland Hydrology	Yes	x	No	
Hydric Soils	Yes	x	No	

Wetland Type: Fen

Rational for Determination: Shrub-dominated wetland, with graminoids and channelized flow

Wetland Determination

[x] **YES** [ ] **NO**

Vegetation

	Tree Stratum: (Plot size: 9m2)	%Cover		Dominant Species	Indicator Status
1					
2					
3					
4					
5					
6					
		0	=	**Total Cover**	
	Shrub Stratum: (Plot size: 5m2)				
1	*Alnus incana*	20		x	*facw*
2	*Prunus virginiana*	20		x	*fac*
3					
4					
5					
		40	=	**Total Cover**	
	Herb Stratum: (Plot Size: 1m2)				
1	*Phalaris arundinacea*	50		x	*facw*
2	*Onoclea sensibilis*	20		x	*facw*
3	*Impatiens capensis*	50		x	*fac*
4	*Solidago canadensis*	20		x	*fac*
5					
		##	=	**Total Cover**	

Comments

Dominance Test Worksheet:

# of Dominant Species that are OBL,FACW,FAC:	6
Total # of Dominant Species across all strata:	6
% of Dominant Species that are OBL,FACW,FAC:	100

Prevalence Index Worksheet:

	Total %Cover of:	Multiply by:	
OBL Species		x 1 =	0
FACW Species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
ULP Species		x 5 =	0
Column Totals:	0		0

Prevalence Index = B/A = ##

Hydrophytic Vegetation Indicators:

- [x] Rapid Test for Hydrolic Vegetation
- [x] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0 [1]
- [ ] Morphological Adaptations[1] (explain)
- [ ] Problematic Hydrophytic Vegetation[1](explain)

[1]Indicators of hydric soil and weland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** x **No**

Hydrology

Primary Hydrological Indicators: (minimum of one is required;check all that apply) 10

x	Surface Water (A1)	x	Water Stained Leaves (B9)
x	High Water Table (A2)		Aquatic Fauna (B13)
x	Saturation (A3)		Marl Deposits (B15)
x	Watermarks		Hydrogen Sulfide Odor (C1)
x	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)
	Drift Deposits (B3)		Presence of Reduced Iron (C4)
	Algal Mat of Crust (B4)		Recent Iron reduction in tilled Soils (C6)
	Iron Deposits (B5)		Thin Muck Surface (C7)
	Inundation Visible on Aerial Imagery (B7)		Other (Explain in Remarks)
	Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators: (minimum of two required)

	Surface Soil Cracks (B6)		Stunted or Stressed Plants (D1)
x	Drainage Patterns (B10)		Geomorphic Position (D2)
	Moss Trim Lines (B16)		Shallow Aquitard (D3)
	Dry-Season Water Table (C2)	x	Microtopographic Relief (D4)
	Crayfish Burrows (C8)		FAC-Neutral Test (D5)
	Saturation Visible on Aerial Imagery (C9)		

Field Observations:

Surface Water Present?	Yes	x	No		Depth	10				
Water Table Present?	Yes	x	No		Depth	0	**Wetland Hydrology Present?**	**Yes**	x	**No**
Saturation Present?	Yes	x	No		Depth	0				

Comments:

Soil Profile

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth(cm)	Matrix		Redox Features				
	Color(moist)	%	Color(moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5cm							organic	
6 - 30cm	7.5YR 2.5/2						sandy clay	

[1]Type:C=Concentration,D=Depletion,RM=Reduced Matrix,CS=Covered or Coated Sand Grains.2Location:PL=Pore Lining,M=Matrix

Hydric Soil Indicators:

	Histosol (A1)		Sandy Redox (S5)
	Histic Epipedon (A2)		Stripped Matrix (S6)
	Black Histic (A3)		Dark Surfaces (S7)
	Hydrogen Sulfide (A4)		Polyvalue Below Surface (S8)
	Stratified Layers (A5)		Thin Dark Surface (S9)
	Depleted Below Dark Surface (A11)		Loamy Gleyed Matrix (F2)
	Thick Dark Surface (A12)	x	Depleted Matrix (F3)
	Sandy Mucky Mineral (S1)		Redox Dark Surface (F6)
	5cm Mucky Peat or Peat (S3)		Depleted Dark Surface (F7)
	Sandy Gleyed Matrix (S4)		Redox Depressions (F8)

Restrictive Layer Type (if observed			Depth:	**Hydric Soil Present?**	**Yes**	x	**No**

Comments:

Project Site:	Beaubassin		Date:	15-Jun-16	Sample Point:	11	Job #:
Client/owner:	Pierre Vautour		Field Investigator(s):	Theo Popma			
County:	Westmorland		Coordinates:	46.2309 x 64.4931			
PID:	861443		Do normal environmental conditions exist on-site?		Yes		No	x

If no, explain: Rain for last week

Atypical Situation? Yes [x] No [ ] Explain: Pool in field

Is this a potential **Problem Area?** Yes [ ] No [x] Explain:

Wetland Determination

(Check One Only For Each Criteria)

Dominant Hydrophytic Vegetation (50/20 rule)	Yes	x	No	
Wetland Hydrology	Yes	x	No	
Hydric Soils	Yes		No	x

Wetland Type:

Rational for Determination:

Wetland Determination

[ ] **YES** [x] **NO**

Vegetation

	Tree Stratum: (Plot size: 9m2)	%Cover		Dominant Species	Indicator Status
1					
2					
3					
4					
5					
6					
		0	=	**Total Cover**	
	Shrub Stratum: (Plot size: 5m2)				
1	*prunus virginiana*	10		x	*fac*
2	*Salix eriocephala*	10		x	*facw*
3					
4					
5					
		20	=	**Total Cover**	
	Herb Stratum: (Plot Size: 1m2)				
1	*Juncus filiformis*	15		x	*obl*
2	*Salix eriocephala*	10		x	*facw*
3	*Agrostis capillaris*	10		x	*fac*
4					
5					
		35	=	**Total Cover**	

Dominance Test Worksheet:

# of Dominant Species that are OBL,FACW,FAC:	5
Total # of Dominant Species across all strata:	5
% of Dominant Species that are OBL,FACW,FAC:	100

Prevalence Index Worksheet:

Total %Cover of:	Multiply by:	
OBL Species	x 1 =	0
FACW Species	x 2 =	0
FAC Species	x 3 =	0
FACU Species	x 4 =	0
ULP Species	x 5 =	0
Column Totals: 0		0

Prevalence Index = B/A = ##

Hydrophytic Vegetation Indicators:

- [x] Rapid Test for Hydrolic Vegetation
- [x] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0 [1]
- [ ] Morphological Adaptations[1] (explain)
- [ ] Problematic Hydrophytic Vegetation[1](explain)

[1]Indicators of hydric soil and weland hydrology must be present, unless disturbed or problematic

Comments

Polytrichum moss dominated this disturbed semi-barren site

Hydrophytic Vegetation Present? **Yes** x **No**

Hydrology

Primary Hydrological Indicators: (minimum of one is required;check all that apply) 11

x	Surface Water (A1)		Water Stained Leaves (B9)
	High Water Table (A2)		Aquatic Fauna (B13)
	Saturation (A3)		Marl Deposits (B15)
	Watermarks		Hydrogen Sulfide Odor (C1)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)
	Drift Deposits (B3)		Presence of Reduced Iron (C4)
	Algal Mat of Crust (B4)		Recent Iron reduction in tilled Soils (C6)
	Iron Deposits (B5)		Thin Muck Surface (C7)
	Inundation Visible on Aerial Imagery (B7)		Other (Explain in Remarks)
	Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators: (minimum of two required)

	Surface Soil Cracks (B6)		Stunted or Stressed Plants (D1)
	Drainage Patterns (B10)		Geomorphic Position (D2)
	Moss Trim Lines (B16)		Shallow Aquitard (D3)
	Dry-Season Water Table (C2)		Microtopographic Relief (D4)
	Crayfish Burrows (C8)		FAC-Neutral Test (D5)
	Saturation Visible on Aerial Imagery (C9)		

Field Observations:

Surface Water Present?	Yes	x	No		Depth	5cm		
Water Table Present?	Yes		No		Depth		**Wetland Hydrology Present?**	**Yes** x **No**
Saturation Present?	Yes		No		Depth			

Comments:

Soil Profile

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth(cm)	Matrix		Redox Features				
	Color(moist)	%	Color(moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2cm							organic	
3 - 20cm	10YR 3/4						Sandy Fill	

[1]Type:C=Concentration,D=Depletion,RM=Reduced Matrix,CS=Covered or Coated Sand Grains.2Location:PL=Pore Lining,M=Matrix

Hydric Soil Indicators:

	Histosol (A1)		Sandy Redox (S5)
	Histic Epipedon (A2)		Stripped Matrix (S6)
	Black Histic (A3)		Dark Surfaces (S7)
	Hydrogen Sulfide (A4)		Polyvalue Below Surface (S8)
	Stratified Layers (A5)		Thin Dark Surface (S9)
	Depleted Below Dark Surface (A11)		Loamy Gleyed Matrix (F2)
	Thick Dark Surface (A12)		Depleted Matrix (F3)
	Sandy Mucky Mineral (S1)		Redox Dark Surface (F6)
	5cm Mucky Peat or Peat (S3)		Depleted Dark Surface (F7)
	Sandy Gleyed Matrix (S4)		Redox Depressions (F8)

Restrictive Layer Type (if observed | Depth: | **Hydric Soil Present?** | **Yes** | **No** x

Comments:

Appendix IV - Plantlist

Scientific Name	Common Name	Srank	Gsrank	SAR-Prov	Cosewic
Equisetum hyemale	Rough Horsetail	S4	4 Secure		
Lysimachia thyrsiflora	Water Loosestrife	S4	4 Secure		
Carex silicea	Sea-Beach Sedge	S4S5	4 Secure		
Carex vulpinoidea	Fox Sedge	S4S5	4 Secure		
Maianthemum stellatum	Starflower Solomon's-Plume	S4S5	4 Secure		
Pinus resinosa	Red Pine	S4S5	4 Secure		
Rubus setosus	Small Bristleberry	S4S5	4 Secure		
Sorbus decora	Northern Mountain-Ash	S4S5	4 Secure		
Abies balsamea	Balsam Fir	S5	4 Secure		
Acer rubrum	Red Maple	S5	4 Secure		
Achillea millefolium	Common Yarrow	S5	4 Secure		
Alnus incana	Speckled Alder	S5	4 Secure		
Antennaria howellii	Small Pussy-Toes	S5	4 Secure		
Aralia nudicaulis	Wild Sarsaparilla	S5	4 Secure		
Argentina anserina	Silverweed	S5	4 Secure		
Arisaema triphyllum	Swamp Jack-In-The-Pulpit	S5	4 Secure		
Betula populifolia	Gray Birch	S5	4 Secure		
Calamagrostis canadensis	Blue-Joint Reedgrass	S5	4 Secure		
Calystegia sepium	Hedge Bindweed	S5	4 Secure		
Carex arctata	Black Sedge	S5	4 Secure		
Carex brunnescens	Brownish Sedge	S5	4 Secure		
Carex debilis	White-Edge Sedge	S5	4 Secure		
Carex gynandra	A Sedge	S5	4 Secure		
Carex novae-angliae	New England Sedge	S5	4 Secure		
Carex paleacea	Chaffy Sedge	S5	4 Secure		
Carex pallescens	Pale Sedge	S5	4 Secure		
Carex stipata	Stalk-Grain Sedge	S5	4 Secure		
Carex stricta	Tussock Sedge	S5	4 Secure		
Carex tonsa	Shaved Sedge	S5	4 Secure		
Chimaphila umbellata	Common Wintergreen	S5	4 Secure		
Cirsium muticum	Swamp Thistle	S5	4 Secure		
Conyza canadensis	Canada Horseweed	S5	4 Secure		
Cornus canadensis	Dwarf Dogwood	S5	4 Secure		
Cornus sericea	Silky Dogwood	S5	4 Secure		
Cornus sericea	Silky Dogwood	S5	4 Secure		
Danthonia spicata	Poverty Oat-Grass	S5	4 Secure		
Doellingeria umbellata	Parasol White-Top	S5	4 Secure		
Dryopteris carthusiana	Spinulose Shield Fern	S5	4 Secure		
Dryopteris intermedia	Evergreen Woodfern	S5	4 Secure		

Scientific Name	Common Name	Srank	Gsrank	SAR-Prov	Cosewic
Echinocystis lobata	Wild Mock-Cucumber	S5	4 Secure		
Epilobium ciliatum	Hairy Willow-Herb	S5	4 Secure		
Equisetum arvense	Field Horsetail	S5	4 Secure		
Equisetum sylvaticum	Woodland Horsetail	S5	4 Secure		
Eupatorium perfoliatum	Common Boneset	S5	4 Secure		
Euthamia graminifolia	Flat-Top Fragrant-Golden-Rod	S5	4 Secure		
Fragaria virginiana	Virginia Strawberry	S5	4 Secure		
Galium asprellum	Rough Bedstraw	S5	4 Secure		
Geum aleppicum	Yellow Avens	S5	4 Secure		
Glaux maritima	Sea Milkwort	S5	4 Secure		
Glyceria canadensis	Canada Manna-Grass	S5	4 Secure		
Hierochloe odorata	Holy Grass	S5	4 Secure		
Hypericum canadense	Canadian St. John's-Wort	S5	4 Secure		
Ilex verticillata	Black Holly	S5	4 Secure		
Impatiens capensis	Spotted Jewel-Weed	S5	4 Secure		
Iris versicolor	Blueflag	S5	4 Secure		
Juncus balticus	Baltic Rush	S5	4 Secure		
Juncus effusus	Soft Rush	S5	4 Secure		
Juncus filiformis	Thread Rush	S5	4 Secure		
Juncus tenuis	Slender Rush	S5	4 Secure		
Lactuca canadensis	Canada Lettuce	S5	4 Secure		
Lathyrus palustris	Vetchling Peavine	S5	4 Secure		
Lathyrus palustris	Vetchling Peavine	S5	4 Secure		
Ligusticum scoticum	Scot's Lovage	S5	4 Secure		
Luzula multiflora	Common Woodrush	S5	4 Secure		
Lycopus uniflorus	Northern Bugleweed	S5	4 Secure		
Maianthemum canadense	Wild Lily-of-The-Valley	S5	4 Secure		
Matteuccia struthiopteris	Ostrich Fern	S5	4 Secure		
Melampyrum lineare	American Cow-Wheat	S5	4 Secure		
Mentha arvensis	Corn Mint	S5	4 Secure		
Moehringia lateriflora	Grove Sandwort	S5	4 Secure		
Morella pensylvanica	Northern Bayberry	S5	4 Secure		
Oclemena acuminata	Whorled Aster	S5	4 Secure		
Oenothera perennis	Small Sundrops	S5	4 Secure		
Onoclea sensibilis	Sensitive Fern	S5	4 Secure		
Orthilia secunda	One-Side Wintergreen	S5	4 Secure		
Osmunda cinnamomea	Cinnamon Fern	S5	4 Secure		
Phalaris arundinacea	Reed Canary Grass	S5	4 Secure		
Photinia melanocarpa	Black Chokeberry	S5	4 Secure		
Picea glauca	White Spruce	S5	4 Secure		
Picea rubens	Red Spruce	S5	4 Secure		

Scientific Name	Common Name	Srank	Gsrank	SAR-Prov	Cosewic
Pinus banksiana	Jack Pine	S5	4 Secure		
Plantago maritima	Seaside Plantain	S5	4 Secure		
Poa pratensis	Kentucky Bluegrass	S5	4 Secure		
Polygonum sagittatum	Arrow-Leaved Tearthumb	S5	4 Secure		
Potentilla simplex	Old-Field Cinquefoil	S5	4 Secure		
Prunella vulgaris	Self-Heal	S5	4 Secure		
Prunus virginiana	Choke Cherry	S5	4 Secure		
Pteridium aquilinum	Bracken Fern	S5	4 Secure		
Quercus rubra	Northern Red Oak	S5	4 Secure		
Rhinanthus minor	Little Yellow-Rattle	S5	4 Secure		
Rosa nitida	Shining Rose	S5	4 Secure		
Rosa virginiana	Virginia Rose	S5	4 Secure		
Rubus idaeus	Red Raspberry	S5	4 Secure		
Rubus idaeus	Red Raspberry	S5	4 Secure		
Salix bebbiana	Bebb's Willow	S5	4 Secure		
Salix eriocephala	Heart-Leaved Willow	S5	4 Secure		
Schoenoplectus pungens	Three-Square Bulrush	S5	4 Secure		
Scirpus microcarpus	Small-Fruit Bulrush	S5	4 Secure		
Sisyrinchium montanum	Strict Blue-Eyed-Grass	S5	4 Secure		
Solidago canadensis	Canada Goldenrod	S5	4 Secure		
Solidago rugosa	Rough-Leaf Goldenrod	S5	4 Secure		
Solidago sempervirens	Seaside Goldenrod	S5	4 Secure		
Sorbus americana	American Mountain-Ash	S5	4 Secure		
Sparganium americanum	American Bur-Reed	S5	4 Secure		
Spartina alterniflora	Saltwater Cordgrass	S5	4 Secure		
Spartina patens	Salt-Meadow Cordgrass	S5	4 Secure		
Spartina pectinata	Fresh Water Cordgrass	S5	4 Secure		
Spiraea alba	Narrow-Leaved Meadow-Sweet	S5	4 Secure		
Spiraea tomentosa	Hardhack Spiraea	S5	4 Secure		
Symphyotrichum lanceolatum	White Panicled American-Aster	S5	4 Secure		
Symphyotrichum novi-belgii	New Belgium American-Aster	S5	4 Secure		
Symphyotrichum puniceum	Swamp Aster	S5	4 Secure		
Thalictrum pubescens	Tall Meadow-Rue	S5	4 Secure		
Toxicodendron rydbergii	Northern Poison Oak	S5	4 Secure		
Trientalis borealis	Northern Starflower	S5	4 Secure		
Triglochin maritima	Common Bog Arrow-Grass	S5	4 Secure		
Typha latifolia	Broad-Leaf Cattail	S5	4 Secure		
Vaccinium angustifolium	Late Lowbush Blueberry	S5	4 Secure		
Vaccinium myrtilloides	Velvetleaf Blueberry	S5	4 Secure		
Veronica officinalis	Gypsy-Weed	S5	7 Exotic		

Scientific Name	Common Name	Srank	Gsrank	SAR-Prov	Cosewic
Veronica scutellata	Marsh-Speedwell	S5	4 Secure		
Viburnum nudum	Possum-Haw Viburnum	S5	4 Secure		
Viburnum opulus	Guelder-Rose Viburnum	S5	4 Secure		
Zostera marina	Sea-Wrack	S5	4 Secure		
Acer negundo	Box Elder	SNA	7 Exotic		
Acer platanoides	Norway Maple	SNA	7 Exotic		
Amelanchier x neglecta	Running Serviceberry	SNA	6 Not Assessed		
Anthoxanthum odoratum	Sweet Vernal Grass	SNA	7 Exotic		
Arctium minus	Lesser Burdock	SNA	7 Exotic		
Artemisia vulgaris	Common Wormwood	SNA	7 Exotic		
Barbarea vulgaris	Yellow Rocket	SNA	7 Exotic		
Bromus inermis	Awnless Brome	SNA	7 Exotic		
Capsella bursa-pastoris	Common Shepherd's Purse	SNA	7 Exotic		
Cerastium fontanum	Common Mouse-Ear Chickweed	SNA	7 Exotic		
Festuca filiformis	Hair Fescue	SNA	7 Exotic		
Frangula alnus	Glossy Buckthorn	SNA	7 Exotic		
Galeopsis tetrahit	Brittle-Stem Hempnettle	SNA	7 Exotic		
Galium mollugo	Great Hedge Bedstraw	SNA	7 Exotic		
Hieracium caespitosum	Meadow Hawkweed	SNA	7 Exotic		
Leontodon autumnalis	Autumn Hawkbit	SNA	7 Exotic		
Leucanthemum vulgare	Oxeye Daisy	SNA	7 Exotic		
Linaria vulgaris	Butter-And-Eggs	SNA	7 Exotic		
lonicera tatarica	Tartarian Honeysuckle	SNA	7 Exotic		
Lupinus polyphyllus	Large-Leaved Lupine	SNA	7 Exotic		
Malus pumila	Common Apple	SNA	7 Exotic		
Matricaria discoidea	Pineapple-Weed Chamomile	SNA	7 Exotic		
Mentha x piperita	Peppermint	SNA	7 Exotic		
Myosotis arvensis	Rough Forget-Me-Not	SNA	7 Exotic		
Parthenocissus quinquefolia	Virginia Creeper	SNA	7 Exotic		
Phleum pratense	Meadow Timothy	SNA	7 Exotic		
Plantago major	Nipple-Seed Plantain	SNA	7 Exotic		
Poa annua	Annual Bluegrass	SNA	7 Exotic		
Polygonum arenastrum	Oval-Leaf Knotweed	SNA	7 Exotic		
ranunculus acris	Tall Butter-Cup	SNA	7 Exotic		
Ranunculus repens	Creeping Butter-Cup	SNA	7 Exotic		
Rudbeckia hirta	Black-Eyed Susan	SNA	7 Exotic		
Rumex acetosella	Sheep Sorrel	SNA	7 Exotic		
Rumex crispus	Curly Dock	SNA	7 Exotic		
Solanum dulcamara	Climbing Nightshade	SNA	7 Exotic		
Spergularia rubra	Purple Sandspurry	SNA	7 Exotic		

Scientific Name	Common Name	Srank	Gsrank	SAR-Prov	Cosewic
Stachys palustris	Marsh Hedge-Nettle	SNA	7 Exotic		
Stellaria graminea	Little Starwort	SNA	7 Exotic		
Tanacetum vulgare	Common Tansy	SNA	7 Exotic		
Taraxacum officinale	Common Dandelion	SNA	7 Exotic		
Trifolium hybridum	Alsike Clover	SNA	7 Exotic		
Trifolium pratense	Red Clover	SNA	7 Exotic		
Trifolium repens	White Clover	SNA	7 Exotic		
Valeriana officinalis	Common Valerian	SNA	7 Exotic		
Vicia cracca	Tufted Vetch	SNA	7 Exotic		
Agrostis sp.	a Bentgrass				
Atriplex sp.	a Saltbush				
Bidens sp.	a Beggar's Tick				
Carex sp.	a Sedge				
Crataegus sp.	a Hawthorn				
Panicum sp.	a Panic Grass				
Solidago sp.	a Golden Rod				
Viola sp.	a Violet				